Our Municipal Notebook

Richmond's Key Sort System Puts Pep in Vital Statistics

BECAUSE of the new key-sorting system, recently initiated in the City Health Department's Bureau of Vital Statistics, Richmond, Va., a clerk with a twist of the wrist, aided and abetted by an elongated hat pin, can tell you in a jiffy any set of figures you may wish to know about births, and deaths, and contagious diseases in Richmond.

Richmond is the first city whose health department has utilized so completely the possibilities provided by the McBee key sort system. Dr. Anthony J. Borowski of the Division of Vital Statistics points out that the use of the cards had slashed hours of tabulation work from the old running-table system of compiling statistical material. More important, however, is the flexibility of the new system, he says.

With this new tool, it is only a matter of minutes before he can determine accurately complete information on any of the items listed on the face of the health department card filled in for births, deaths or contagious diseases. The face of the cards bears a duplicate of the information given on regular health department cards, edged with a border of perforations, keyed to provide information on every item listed on the card. Little time is required for the clerk to slot or punch the appropriate holes along the edge to correspond with the information on the card.

Placed on end on a flat surface, the cards are threaded with the "hatpin" at the point where information is desired. For example, to secure the number of female deaths in Richmond during the past year, the long "hatpin" would be passed through the hole marked "M" for male, on the death certificate cards, and the number of cards which fell away from the pin would represent the total number of men who died in the city during the last year, those remaining on the pin represent the women.

A further advantage of the cards is their high percentage of accuracy, Dr. Borowski declared. By making the task of tabulation more mechanical, he pointed out, the possibility of human error is largely eliminated. "By riftling the cards briefly a mistake in punching or in marking the information on the cards sticks out like a sore thumb."

As a result of the new system, Dr. Millard C. Hanson, director of the health department, says he is given more statistical information on more subjects, information which enables him to utilize more efficiently his department staff. "Accurate statistics are the measuring rod of health department activities, the only way we can judge intelligently our success," Dr. Hanson commented.

Under the old system of tables, statistics could be tabulated completely only at the end of the year. Under the new key-sorting system, complete figures may be obtained at any hour of the day from information on hand.

Non-resident cases may be separated readily from resident cases, for example: The earlier method in which residents and non-residents were unseparated resulted in fallacious rates of various sorts, Dr. Borowski said. Separations may be made on the basis of age, color, sex, or occupation. Such detailed information on deaths, births, or communicable diseases puts in the hands of the department the key to trends of various kinds.

Where once it was necessary to spend hours in determining any set of statistical facts, such as the number of illegitimate children born in Richmond last year, it is now a matter of a few minutes. In addition to this time-saving aspect of the new system, the possibility that the result will be in error is eliminated almost completely.

GEORGE E. TOLES

Traffic Markers in Indianapolis

ABOUT seven or eight years ago we used our first Armor-Flex traffic markers in Indianapolis marking cross walks at one heavily traveled intersection. They stayed in service for some two or three years, but came off when the asphalt surface was rolled.

Two STOPS were put down some five or six years ago and they are still about 85 percent as effective as when new. Cross walks were marked at three intersections in 1942. They are still in good condition.

We believe Armor-Flex traffic markers are superior to paint because they stay 12 months out of the year and, over the life of the markers, are less expensive than traffic paint.

ARTHUR B. HENRY
City Civil Engineer
Indianapolis, Ind.

Are You Considering a Municipal Electric Plant?

IN the keen competition among cities which seems certain to mark the post-war years, the cost of electricity to industrial and domestic consumers will be a factor to be reckoned with. This will bring into even sharper relief than heretofore the long-standing controversy as to the comparative advantages to the public of privately and municipally owned electric plants and distribution systems.

Three methods of procedure are, of course, available for cities which are unable to secure what they regard as fair rates from utility corporations: (1) the building of a municipal plant for generation and distribution of energy; (2) the acquisition, by purchase or condemnation, of an existing privately owned utility; (3) the purchase of power in bulk from a federal or utility source for municipal distribution. Before adopting either of these drastic procedures, wisdom would dictate a study of the results of municipal ownership and operation in a sufficiently large number of cities to give a comprehensive indication of probable local results. Such a study ought obviously to include figures as to taxes paid by utility corporations, free service rendered by municipal plants, and other factors affecting comparative costs and rates.*

Of cities of 5,000 population or more, 434 cities sell municipal energy and the people of 750 cities use private-utility service. The average cost to the consumer of private and municipal power has been worked out for all these cities by the Burns & McDonnell Engineering Co., Kansas City, Mo., and will be discussed in the July issue of THE AMERICAN CITY. R. E. McDonnell finds that the price of electricity charged by private utilities in 190 of the larger cities is 28 percent greater than the average price charged by the municipal systems in 22 of these cities of 50,000 population or more.

His article does not argue or interpret this and other interesting facts. Instead he asks provocative questions which every city official can answer in his own way. It may fairly be presumed that in a number of instances the answers will be municipal electric post-war projects.

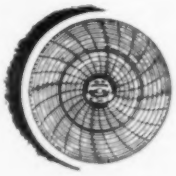
* Useful material in this connection will be found on pages 446-454 of MUNICIPAL INDEX 1937.

Keeping *Line Pressure* in balance on peak loads

. . . with the aid of this 1,500,000*-gal. Horton radial-cone bottom elevated water tank.*

In this 1,500,000-gal. Horton elevated tank, the City of Aurora, Illinois, has the answer to many of the water supply problems which confront a municipality during wartime. The radial-cone tank was erected as a part of a half-million dollar waterworks improvement program undertaken a few years ago. Other major units in the project consisted of a high-lift pumping station, a 4,000,000-gal. ground-level reservoir and water main additions.

This Horton elevated tank is 69 ft. to bottom and has a range in head of only 25 ft. Recent reports show that elevated storage has played an important part in the Aurora system, reflecting a power savings in keeping the line pressure in balance on peak loads.



The foresight of many waterworks engineers and municipal officials in recommending elevated storage for their cities has aided the nation's war effort immeasurably. Demands on water supply systems during the post-war period will be great too.

Write our nearest office for information on Horton elevated tanks. Also ask for bulletin entitled *"The Distribution System —Some Basic Considerations in Its Design, Maintenance and Operation."*

Quick Facts
...about HORTON Elevated Storage
. . . makes possible the pumping of a larger percentage of the city's needs during off-peak periods.
. . . provides for a reserve of water immediately available for fire protection.
. . . helps to iron out pressure fluctuations in the distribution system.
. . . provides for a reserve in case of power failure.

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Chicago 4.....2127 McCormick Building
San Francisco 5.....1033 Rialto Building
Philadelphia 3.1616-1700 Walnut St. Building
Havana.....402 Edificio Abreu
Washington 5.....330 Bowen Building

Plants in BIRMINGHAM, CHICAGO and GREENVILLE, PENNSYLVANIA

Water Works In Wartime

Annual Conference of the American Water Works Association

THE annual American Water Works Association's 1944 conference to be held June 13-16 inclusive in Milwaukee, Wis., is attracting more interest than it has ever before done.

Why? Because the unprecedented demands of wartime industry and the fluctuating requirements of many communities throughout the United States have highlighted the importance of water as never before, and Water Works men, aware of the demands of today, are doing their best to keep informed and to furnish their communities with the best possible product they can within wartime restrictions.

What are your problems? The program committee has designed its meeting to cover as wide a range of problems in water-works operation as possible and if your problems are not answered it is not because the Association officials have not tried.

The Subjects to Be Covered

Plant Management and Operation—Look for some good tips on distribution systems from George Booth, along with an interesting story on *South American Water-Works Management Practices* from Colonel H. B. Goteas (Sanitary Corps, U. S. Army) and R. D. Mitchell. *Costs and Depreciation* will be analyzed by such authorities as Charles B. Burdick, E. H. Aldrich, N. T. Veach, and L. R. Hansen (of Advord, Burdick, and Hawson); *Water Purification* will interest operators of lime-soda plants in particular who want to learn about the recovery of calcium carbonate from sludges to be explained by H. C. Pedersen (Marshalltown, Iowa) and R. T. Sheen (Chestnut Hill, Pa.).

Interesting to all will be the discussion of distribution system biology, the relation of chemicals to water palatability, and the economics of a de-ionized water supply.

Also look for some interesting discussions of general water-works practice under the leadership of Malcolm Pirnie, New York, consulting engineer, and president of the American Society of Consulting Engineers; and general discussions of wartime and post-war problems under the guidance of Samuel B. Morris, president of AWWA and S. F. Newkirk, the Association's incoming head.

When the committee on Specifications for Wells and Well Pumps hold their open session Friday morning there will surely be a lively discussion. If you are interested don't miss it.

So. Carolina Conducts Water-Works Course

ON April 10 and 11 a short water-works course was held at Clemson College under the auspices of the South Carolina Water Works Association and the South Carolina State Board of Health.

Professor D. B. Rosenkrans delivered the first lecture on the subject of "Fresh Water Organisms." The highlight of the course was a talk given by Colonel M. J. Blew, Chief Sanitary Engineer, Fourth Service Command, who stressed the importance of water-works courses during the national war emergency. "The Chemistry of Water Treatment," was covered by Professor J. H. Mitchell as the final lecture of the first day.

The second day was taken up with laboratory work, examinations and a lecture by Dr. W. B. Aull covering the subject of "Bacteriology," from a water-works operators' standpoint.

To give the students a clear picture, charts and drawings showing the various phases of water treatment were provided by Guy H. White, superintendent of the Columbia Water Plant.

Joliet, Ill., Checks Well by Electric Recording System

JOLIET, ILL., recently made a complete investigation of the entire 1,600 feet of its Ottawa Street well according to Joseph F. Whalen, Commissioner of Water. The investigation was made by the Halliburton Oil Well Cementing Company, Duncan, Okla.

The process involves the use of a huge truck equipped with instruments and an instrument board for recording on the film not only the condition of the well but also any defects in the casing. A caliper device that carefully measures diameters and irregularities is lowered in the well in a closed position. When the caliper is on the bottom of the well four arms are released and the device is pulled out, recording the variations in diameter as it comes.

"In former years," Mr. Whalen states, "if the pump was removed for repairs, there was no sure way of determining what changes if any were needed in the well. Often times, several months after the pump was replaced, it was necessary to remove it for other repairs. This will enable us to determine exactly what repairs are necessary before we replace the pump."

Blueprints Complete for Athol, Mass, Post-War Reservoir

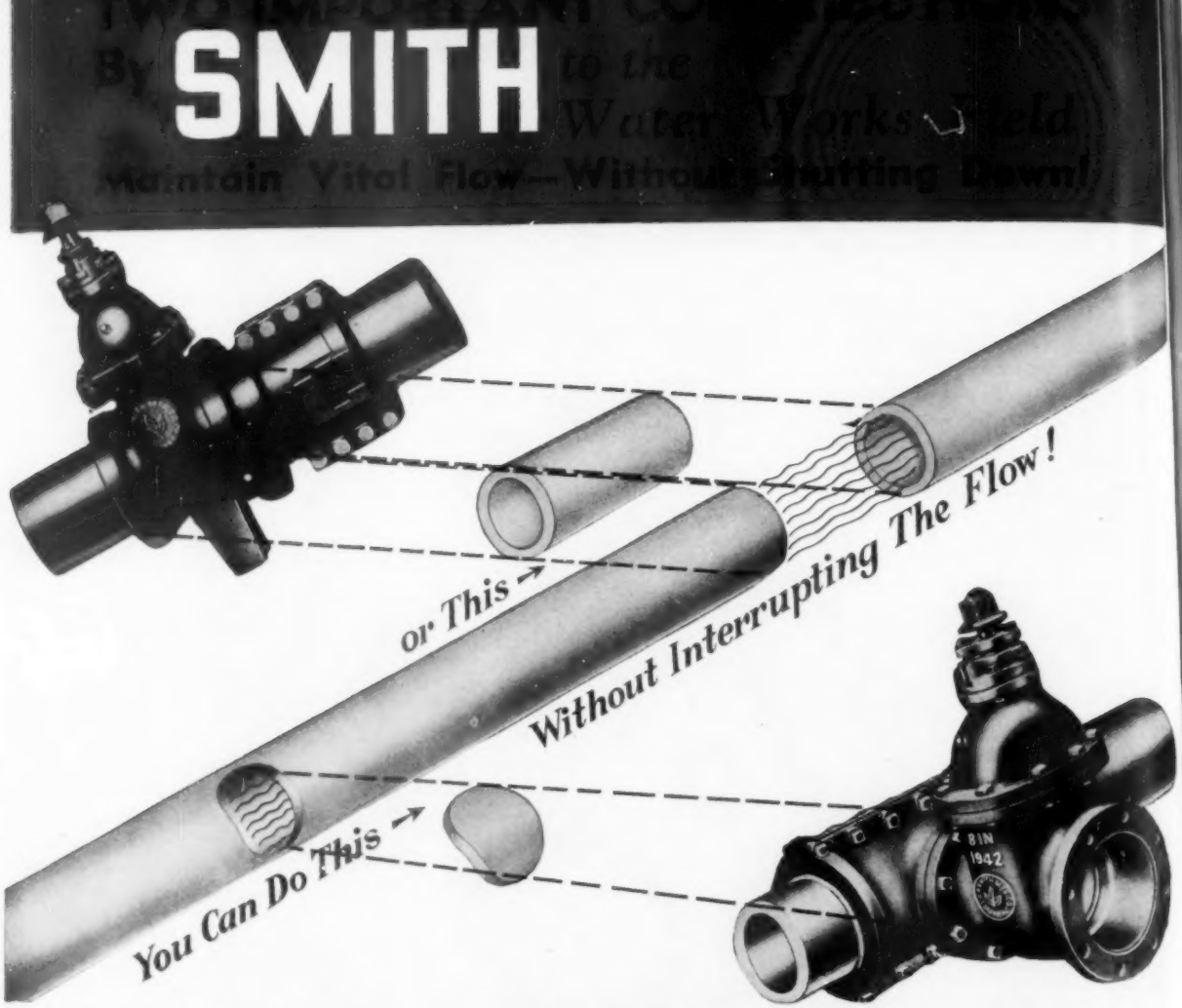
THE blueprints and all of the engineering for the proposed Baldwin Hill Reservoir to serve the town of Athol, Mass., have been completed, and it would take only a short time to have this project ready for construction. This is according to Robert W. Glasheen, Superintendent of the Athol Water Department, in his annual report to his Water Commissioners.

During 1943, he reports, the department had to pump water from a well near one of the other city reservoirs to maintain an adequate supply. Therefore, this new proposed reservoir would be an extremely desirable post-war project.

This ellipsodial roofed water tower built by the Chicago Bridge & Iron Co., was erected at Stockton, Calif., in 1942.

TWO IMPORTANT CONTRIBUTIONS By SMITH to the Water Works Field

Maintain Vital Flow—Without Shutting Down!



In your planning of postwar extensions, these two SMITH contributions can play a very vital part. Their usefulness has been proven over a great many years by some of the most progressive water departments in the country. The same engineering developments common to these two useful devices is characteristic of the entire SMITH line of water works equipment.

SMITH TAPPING MACHINES

in a full range of sizes for use with Smith Tapping Sleeves and Valves are available for purchase or rental. These machines permit the connection of branch lines 2" to 42" to any size of main or tank carrying oil, water or gas without interrupting the service. Machines can be hand or air operated.

Blueprint FOR TOMORROW'S NEEDS Now!

SMITH INSERTING MACHINES

make it possible to insert gate valves from 4" to 36" into existing main lines without shutting down the line or interrupting the service. Information on both of these useful machines and on other SMITH products can be had by writing for Catalog 42M for water and 42G for gas.

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Sewerage and Sewage Treatment

Central State Sewage Meeting

ON June 22-24 the joint Wartime Conference on Sanitation of Central States Sewage Works Association and the Wisconsin Sewerage Works Operators will be held at Oshkosh, Wis.

Some of the interesting and timely topics to be discussed are:

"Inside the Federation Portal" by W. H. Wisely, Executive Secretary and Editor, Federation of Sewage Works Associations.

"The Principles and Elements of Accurate Control of the Aeration-Sedimentation Type of Sewage Treatment Cycle," by E. B. Mallory, Director of Research, Lancaster Iron Works, Hackensack, N. J.

"Post-War Planning for Sanitation," by E. L. Filby, National Committee on Water and Sewage Works Development.

And an operators breakfast symposium, "Sludge, Information Please," of which C. O. Baetz, Assistant Chief Water & Sewage Services, 6th Corps Area, is the leader.

Watch Out for Corrosive Digester Gas

IF the hydrogen sulphide content of your digester gas is higher than 5 grains per 100 cubic feet, then it is essential to reduce the hydrogen sulphide content by treating the gas if you are to prevent such difficulties as pitting of the gas engine, clogging of piston rings, or the formation of sludge in the crank-case oil. This was explained by J. P. Burden, City Engineer, San Angelo, Texas, at a recent meeting of the Texas Annual Water Works and Sewage Short School at College Station, Texas.

The usual way, according to Mr. Burden, to remove the H_2S is to pass it through iron oxide, generally supplied by iron shavings or peat.

The San Angelo plant, Mr. Burden stated, is based on the use of Imhoff tanks. The gas pipe from the three Imhoff tanks are connected into one 2-inch pipe. On this 2-inch main line is a gas drip for collecting as much moisture as possible. From the drip the gas passes into a scrubber for the purpose of reducing the hydrogen sulphide gas to a safe minimum. The gas then goes through another drip, a regulator, flame trap, and then into the engine.

The gas engine is connected directly to a 6-inch sludge pump. The engine is a 32-hp motor rated at 1,100 rpm. It is a four-cylinder, valve-in-head engine manufactured by Climas and is directly connected to a 6-inch centrifugal open impeller sludge pump with a capacity of 1,400 gpm against a maximum life of 42 feet.

Controls Imhoff Tank Foaming

EVERY operator who has his plant built around the use of an Imhoff tank knows about the problems of foaming. Here is the way the San Angelo, Texas, plant controls this difficulty:

According to J. P. Burden, City Engineer, speaking before the annual Water Works and Sewage Short School at College Station, Texas, recently, San Angelo has developed what is called "controlled foaming." The first thing that happens when foaming begins is that the sludge will gush up and clog the gas lines. If the stoppage is not discovered, the foam will soon begin to boil over the top of the 6-inch safety pipe. As soon as this condition is detected, the operator closes the gas valve on this tank and removes a 3-inch plug, placing a 3-inch pipe in the header. The pipe is run to the nearest sludge bed.

With the aid of the gas pressure, the foam continues to push out of the 3-inch pipes. If the bulking is bad, the sludge will be very thin and will distribute itself easily over the bed. As the foaming diminishes and the tank begins to return to normal, foam will become so thick that the plant operator will have to spread the foam uniform over the bed by hand.

Mr. Burden stated that although it was their practice to take the foaming tank out of service when possible, on occasions the tanks have been left in service and the results have been satisfactory since none of the foam could get into the tank flow chamber.

The foam dries rapidly in the sludge beds and is utilized in the same manner as the dried sludge.

Cities Adopt Sewer Rental Systems

WITHIN the past year a number of cities throughout the country have adopted sewer rental charges to finance their sewerage disposal systems. According to the International City Managers Association report, these cities are:

Hillsboro, Muscoutah, Morrison, and Morris City, Ill.; Childersburg, Grove Hill, and Sulligent, Ala.; Mount Lebanon, Pa. (to war housing only); Laramie, Wyo.; Renton and Kirkland, Wash.; Lakeland, Fla. (yields $30,000 yearly); Concord, N. H. ($10,000 yearly); and Seminole, Okla. ($10,000 yearly).

Philadelphia, Pa. has just enacted a sewer rental ordinance to finance its post-war sewage disposal project. It will go into effect January 1, 1945.

PHOTOGRAPH BY THE DORR CO.

This is Seminole, Oklahoma's biofiltration plant

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BUFFALO, N. Y.	DETROIT, MICH.	MIAMI, FLA.	OMAHA, NEBR.	SEATTLE, WASH.
CHATTANOOGA, TENN.	EL PASO, TEX.	MILWAUKEE, WISC.	PHILADELPHIA, PA.	SYRACUSE, N. Y.
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ORIGINATORS AND MANUFACTURERS OF DOUBLE DRAINAGE SHOWER, FLOOR AND ROOF DRAINS . . . NON-CLOG TRIPLE DRAINAGE DRAINS . . . SWIMMING POOL EQUIPMENT . . . INTERCEPTORS FOR GREASE—OIL—PLASTER AND HAIR . . . BACKWATER VALVES

BACKWATER SEWER VALVES

Josam Side Swing Open Seat Backwater Sewer Valves prevent damage to property equipment and supplies. They open freely for any outward flow of water, and close instantly at the slightest back-flow preventing water and sewage from flooding the basement.

CAN BE ADJUSTED TO CLOSED SEAT TYPE WHEN NECESSARY.

The disc revolves, eliminating uneven wear and is cleaned with each discharge of water. Inside of valve is offset to prevent fouling.

CASCADE GREASE INTERCEPTOR

With Scientific Sizing and Flow Control

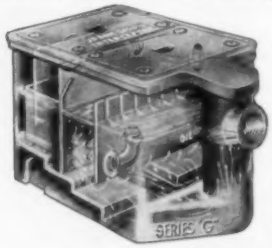
Josam Cascade Grease Interceptors made of Cast Iron provide 95% efficiency in grease interception and retention with complete evacuation of solids. Positive protection against clogged drain lines by greases and fats is assured. The exclusive Cascade design with specially designed baffles properly shaped and correctly placed completely clarifies grease laden water regardless of water temperature. COLD WATER CONNECTIONS UNNECESSARY.

Josam Grease Interceptors are designed, constructed and tested on the basic principle that efficiency depends on the rate of flow. Special flow control fittings have been designed to regulate the flow so that it will never exceed the maximum at which highest efficiency can be maintained. This control feature makes possible correct sizing by which the proper size interceptor can be determined for any condition or requirement.

Important new literature giving complete Rating Data and Sizing Information will be furnished on request.

GAS-OIL INTERCEPTORS

This unit installed in the drainage line intercepts and automatically drains off oil, gasoline and other volatile liquids from the floor drainage of airports, garages, factories, refineries, cleaning and dyeing establishments and where these volatile liquids are present. The intercepted oil and other dangerous liquids are automatically discharged into a container placed at a convenient and safe distance. Scientifically engineered on the hydraulic cascade principle . . . it effectively separates all oils, inflammable liquids and solids, preventing them from entering the waste water to cause fire, explosion or water polution.



Can be furnished with either adjustable draw-off so that gasoline and oil is automatically discharged to a salvage tank, or with automatic gas-oil ejector designed to discharge gasoline and oil to close against water.

NON-CLOG TRIPLE DRAINAGE DRAINS

A size and type for every requirement. This exclusive Josam development combines auxiliary surface drainage, with the well known double-drainage feature of Josam drains. This drain offers complete protection against clogged drains, flooded floors and damage to buildings by debris laden waste water. Removable sediment container catches solids and prevents them from entering and clogging drain body. Even when container is completely filled surface flow of waste water continues without interruption through the auxiliary drainage holes. This unit in various types and sizes is so designed that the sediment container must be replaced in the body after cleaning before the grate can be placed in position since the support for the grate is inside top rim of the sediment container.

SHOCK ABSORBERS—To eliminate hammer in Water Supply Lines

The terrific impact in water supply lines when a valve or faucet is suddenly shut off is instantly and definitely overcome by installing JOSAM SHOCK ABSORBERS. This dependable device quiets the irritating din permanently and prevents break-down of machinery and equipment. Quick and easy to install in any position in water supply lines and once installed, requires no further attention. Used extensively by hospitals, hotels, schools, theatres, ships and apartment houses where quiet is imperative.

WRITE FOR DETAILED INFORMATION ON THESE JOSAM PRODUCTS

Airports and Aviation

Airport Zoning Important

WHEN Philadelphia lost its last direct connection with transcontinental air service March 31 of this year at which time the United Airlines discontinued service to the Allentown-Bethlehem, Pa., airport because of an injunction brought by a farm couple in Lehigh County Court, it became apparent that adequate zoning laws are equally as important as good airport designing.

Because the injunction was obtained by Frank and Mary Dlugos, whose farm adjoins the airport through the contention that low-flying planes frightened their animals and caused a menace to safety, airline passengers from Philadelphia must take trains to New York in the future.

Airport Leases Uncertain

UNLESS a city knows the extent to which its airport will be used during the next few years in terms of commercial air transport, feeder service, fixed base operations, charter service and private flying, it will be difficult for a city to determine to any degree of accuracy whether a proposed lease or arrangement will be financially sound and equitable.

308 Airport Projects for Michigan

PROJECTED extensions of 129 existing municipal plus 179 new airports, landing fields, and landing strips form the foundation of Michigan's airport construction program proposed recently by the Michigan Board of Aeronautics under Thomas E. Walsh, Acting Director. To expedite the plan, the board has requested a legislative appropriation of $3,000,000 of which $250,000 was appropriated by the Special Session of the Legislature.

According to a report by Mr. Walsh, this program is tentative and may require additional airport locations later. It has been suggested that single airports might be able to serve several smaller cities in some regions. No specific recommendation was made for the airport system of the metropolitan areas of Detroit.

The financing of this plan is based upon municipalities acquiring the site property and financing their own buildings, concluding that the building should provide a source of revenue in rentals. It is recommended that the state finance, on a matching basis, the landing field improvements—grading, drainage, runway surfacing, and lighting.

New Invention May Simplify Airport Design

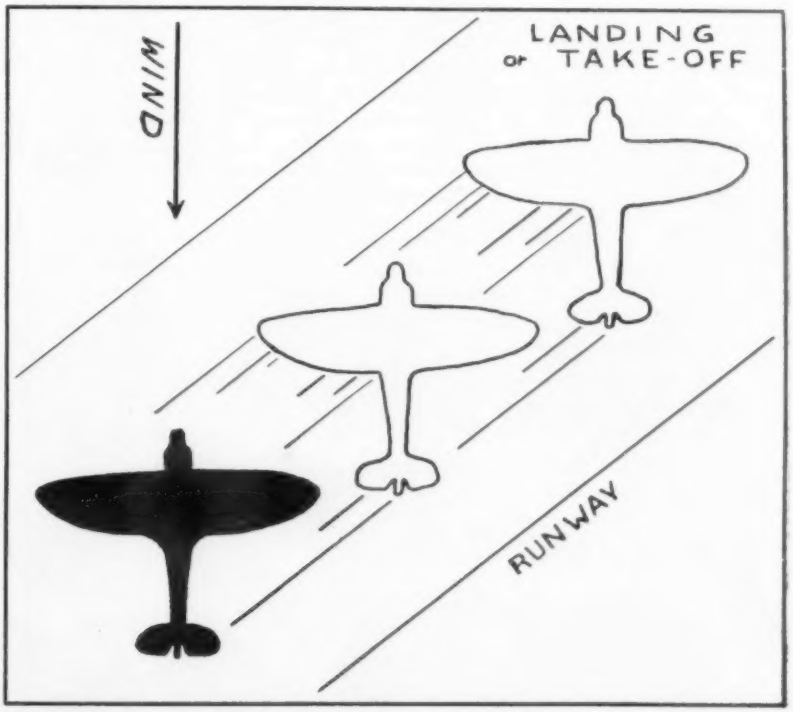
BECAUSE of a new invention in aircraft design the airport of the future may consist of no more than a single landing strip, according to a British Ministry of Information release. This important device, by permitting an airplane to move crabwise with a sidelong motion, will simplify landings and take-offs, and save large sums in the construction of runways, it is claimed.

When an airplane is flying neither directly into the wind nor with the wind right behind it, it develops both a sideways and forward drift. To enable this drift to begin on land before taking off or prolonged when landing so that a plane will not be wrenched out of its course while in the air, a type of undercarriage has been developed under the direction of the Air Ministry by Airwork, Ltd., of Heston. The inventor is a young Scottish flying instructor, Owen MacLaren.

In the new device, the aircraft's wheels are set at an appropriate angle off the wind in relation to the runway on which it is to take off. It is thus unnecessary to turn the aircraft into the wind before taking off or landing. The pilot puts the nose of the plane into the wind and then turns the wheels so that he can land at an angle to the direction in which the nose is pointing.

This new "drift" undercarriage has proved so successful that it has been fitted to the Airspeed "Oxford," the Miles "Magister," the Whitney Straight "Monarch," and other types of planes.

It is claimed that the new device will be important to air transport after the war, because it will obviate the construction of vast starfish airfields with runways going in half a dozen directions over hundreds of acres. It is pointed out that single runway airfields could be built in city parks, or adjacent to highways as are the landing-strips constructed for defense purposes today taking up no more room than a section of road. Single runway airfields could also be placed in hilly country where starfish airdromes cannot be provided.



This shows how a plane equipped with the swivel-type landing gear may take-off or land "out-of-wind."

Terrific Power

Under Smooth Control

The same tremendous waterpower that destroys breakwaters and carves great gullies in fertile farms is harnessed effectively by Clayton Feather-Touch Valves to perform useful work. Clayton engineers have developed a new method of using line pressure so that the liquid controls its own flow and level. Thousands of once difficult flow problems are solved simply and effectively—by the smooth, positive action of Clayton Hydraulic Valves.

Now Clayton Valves automatically maintain liquid levels in tanks or sumps, provide sensitive, automatic control of pressure, without line hammer, shocks or leaks—handle several valves with a single remote control—and serve in many other industrial applications.

Complete information on the unique features of Clayton Feather-Touch Valves and their applications to countless industrial and municipal requirements available on request.

Other Clayton products serving the Armed Forces include: Flash Type Steam Generators—Hydraulic Dynamometers—Kerrick Kleaners and Kerrick Cleaning Kompounds—Boring Bar Holders and Boring Bars.

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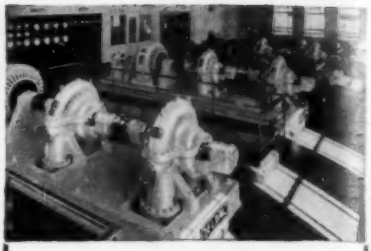

The power-limiting characteristics of

DE LAVAL PUMPS

permit of selecting the motor size for maximum motor efficiency at the load giving maximum pump efficiency

Also, by reason of their low torque at shut-off, De Laval Pumps permit the use of self-starting synchronous motors, which, by improving the power factor, may earn a lower unit power rate.

The aggregate capacity of De Laval pumps installed in American water works is more than sufficient to supply the normal water requirements of 130,000,000 people.

Write for Catalog P-4094

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STEAM TURBINE CO.
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APCO-V-APCO PRIMERS

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AIR RELEASE VALVES

FOR
FILTER PIPE LINES
DISTRIBUTION LINES
AND OTHER USES
17 TYPES

VALVE AND PRIMER CORPORATION
Room 366—111 W. Washington St.
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OPA and Refuse Collection

THE Office of Price Administration announces that on May 8, 1944, charges for collecting ash, garbage, debris, or trash performed for a municipality or other government, or where the charges for these services are established or approved by a government body, are exempt from price ceilings.

Any services of this nature performed for a private employer will remain under price control and will continue under the services regulation with the highest rate he charged in March 1942 as the ceiling price.

OPA said it believed that local government officials will adequately protect the public from any excessive charges. This exemption was made because a scarcity and rising cost of labor have raised numerous problems to local governing officials and by lifting price regulations these problems could more easily be solved.

The exemption has been made sufficiently broad to except those services from price control where they are performed directly by a unit of the local government; when the local government directly contracts with others for the supplying of these services, and when the government fixes or requires its approval of the rates and charges for these services when supplied by contractors for the public.

Compression-Type Refuse Truck

IT is interesting to note the swing of cities from the open-type refuse truck to the closed type with the compressor feature. Not only does this type of body improve the appearance of the truck, but it also produces many definite savings. Here are a few opinions expressed by cities using this improved type of refuse collection equipment.

Big Springs, Texas:

This city purchased two compressor type trucks with which it planned to give two complete pick-ups each week. The units proved so satisfactory, however, that only one was necessary to cover the residential district twice a week picking up trash and garbage. (Population 12,600.)

Newark, N. J.:

The compressor type truck carries 460 pounds of garbage per cubic yard of capacity, compared with 280 pounds per yard in the other types used there. (Details of the Newark tests will be given in the July issue.)

Hackensack, N. J.:

The compression type unit made 4 trips to collect 5.2 tons of garbage and 2.25 tons of ashes and rubbish in 6 hours and 5 minutes. Under similar conditions on the same route an open truck required eight hours and made 9 trips.

Worcester, Mass.:

The extra labor needed in packing loads on open trucks has been eliminated.

Raleigh, N. C.:

One compactor truck replaces three 1½-ton trucks and saves a total of 4 workers.

No Priority for This Flusher

LAST October, the city of New Orleans needed a new street flusher badly. Being one of the year-round wettest cities in the United States, New Orleans streets get dirty mighty fast, and a whole fleet of flushers is required to keep the thoroughfares clean.

But flushers hadn't been made in a long time, and there were none to be had in the market. So Mike Kelly, Deputy Property Commissioner, decided to make one in the city shops.

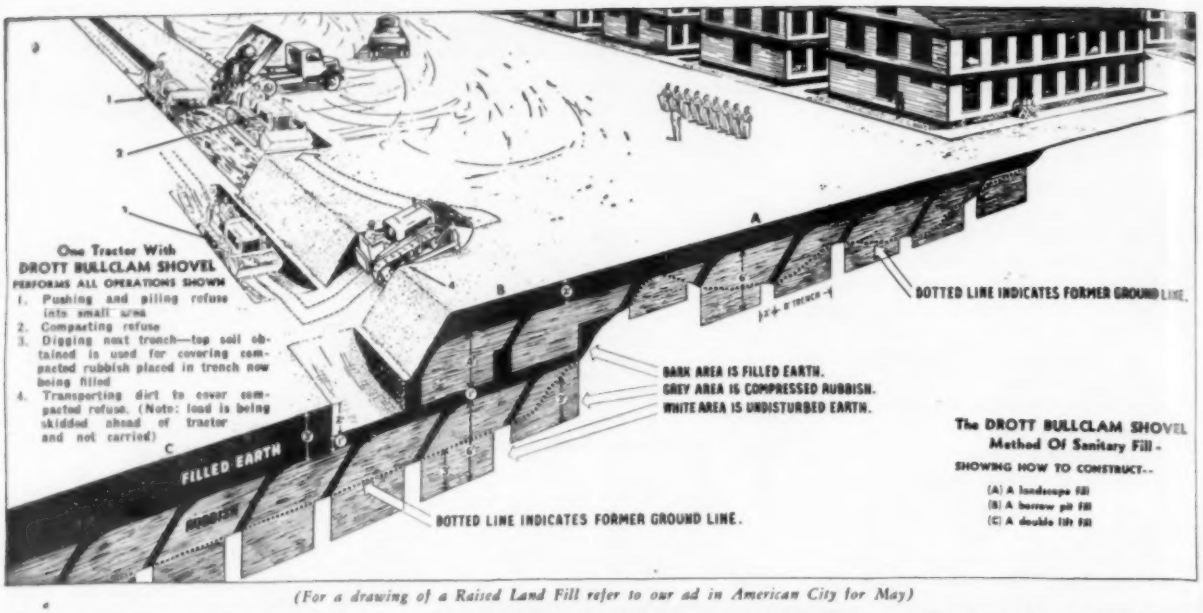
The chassis came from an old retired truck. Old garbage tanks that were also lying around serving no useful purpose were welded together to supply the flusher's tank. City junk piles furnished all other items except the White motor, the only part bought from outside sources.

Work was begun on October 15 and finished on December 15. Even so, the flusher would have been finished sooner, says Mr. Kelly, except for an unavoidable delay in securing the motor from White.

Mayor Robert S. Maestri and Commissioner of Public Property, Joseph Skelly, Mr. Kelly's boss, took time out to compliment the deputy commissioner effusively after witnessing tests of the new flusher.

The flusher has a water capacity of 1,800 gallons, quite ample in comparison with commercial models that run from 1,500 to 2,200. It generates enough pressure in its many jets to send solid bricks scooting over the street surface. It may also be used in case of need, according to Mr. Kelly, for combating fires, a consideration in the days when all American cities were busily practicting procedures and precautions in case of enemy air raids.

New Orleans "priority free" street flusher.


One Tractor With
DROTT BULLCLAM SHOVEL
PERFORMS ALL OPERATIONS SHOWN
1. Pushing and piling refuse into small area
2. Compacting refuse
3. Digging next trench—top soil obtained is used for covering compacted rubbish placed in trench now being filled
4. Transporting dirt to cover compacted refuse. (Note: load is being skidded ahead of tractor and not carried)
DOTTED LINE INDICATES FORMER GROUND LINE.
DARK AREA IS FILLED EARTH.
GREY AREA IS COMPRESSED RUBBISH.
WHITE AREA IS UNDISTURBED EARTH.
FILLED EARTH
DOTTED LINE INDICATES FORMER GROUND LINE.
The DROTT BULLCLAM SHOVEL
Method Of Sanitary Fill -
SHOWING HOW TO CONSTRUCT--
(A) A landscape fill
(B) A borrow pit fill
(C) A double lift fill

(For a drawing of a Raised Land Fill refer to our ad in American City for May)

SEALS REFUSE...ELIMINATES ODOR, FIRES, RATS

COMPACTING REFUSE! All debris is thoroughly "chewed up" and compacted by driving over it.

DROTT BULL CLAM SHOVEL METHOD OF SANITARY FILL

Now you can bury your refuse and seal it with top soil ...at the same time eliminate fire hazards, odors, rats and other pests ... minimize the blowing of dust and loose objects over the neighborhood. The Drott Bull Clam Shovel Method Of Sanitary Fill IS the answer to your waste disposal problems. It enables you to make fills close to residential areas, thereby shorten hauls and lower handling costs. There's no unsightly dump — instead, a landscaped lot which you can use for a playground, park or building site. It will pay you to investigate this new method of handling refuse!

DROTT BULL CLAM SHOVEL FITS ALL CURRENT MAKES AND MODELS OF CRAWLER-TYPE TRACTORS, from 30 to 130 h.p. Four sizes. 1 to 4 yd. capacities.

OPERATED BY
DROTT POSITIVE, CLOSED HYDRAULIC SYSTEM
SMOOTH • QUICK
Keeps dirt and air out...keeps oil in! Used successfully on Drott equipment for many years.

GET THE COMPLETE STORY!
Send for this Book
"Answer To Your Waste Disposal Problems...With the Drott Bull Clam Shovel"
FREE!

DROTT UNIVERSAL EQUIPMENT

WRITE
HI-WAY SERVICE CORPORATION
3841 W. Wisconsin Ave.
MILWAUKEE 8, WIS.
739 Munsey Bldg.
WASHINGTON 4, D.C.

Public Safety

NFPA Singles Out Fire Prevention Methods At Annual Conference

A COMMITTEE of five members, David J. Price, Chairman, George W. Elliott, L. G. Schraffenberger, E. O. Shreve, Alvah Small of the National Fire Protection Association, prepared a report on "Long-Range Planning for Fire Protection," which was presented at the 48th annual meeting of the organization, May 8-11 in Philadelphia.

Says the committee, "We foresee a continuing need for cooperative attention to fire safety. If such measures as some of the following are put into effect, loss of life and property by fire may be expected to show a very material decrease."

The committee made recommendations in a 21-point program for fire safety, parts of which are given here:

Rebuilding Cities— We recommend to all concerned with city planning, municipal administration, and individual building projects that plans be laid for the gradual rebuilding of cities to make them immune to the danger of sweeping fires and conflagrations, without the necessity of dependence upon manual fire-fighting methods to prevent the spread of fire from building to building, or block to block. We call particular attention to the advantage of wide separation between buildings or groups of buildings. Separation sufficient to prevent the spread of fire from structure to structure or block to block has many advantages in addition to the avoidance of exposure fires and conflagrations. Not the least of these is that a city so planned would be relatively immune to the effects of incendiary bombing in any future war and would offer an unattractive target from a military point of view.

We suggest, as an immediate step toward reducing city congestion and attendant fire hazards, making provision for off-street parking of automobiles in parking lots and garages.

Replacement of Temporary Construction—There should be a program for the removal, replacement, or repair of all wartime temporary construction which has been erected or installed without proper regard to the established standards of fire safety; and that wartime deficiencies in private fire protection be corrected. This should receive immediate attention in the post-war period so that hazardous conditions may be eliminated before they have had time to register serious results in increased loss of life and property by fire.

Municipal Fire Protection—Further post-war attention should be given to strengthening municipal fire protection including fire departments, water supplies and fire-alarm signaling facilities to bring such protection up to the proper standard and correct the deficiencies that have accumulated during the war. Particularly there is a need for filling of vacancies in fire-department personnel, for replacing obsolete fire apparatus and equipment, for making necessary extensions in municipal water systems and water-storage facilities.

Integrating Public Fire Protection—We urge the further installation of automatic sprinklers and other forms of fire extinguishing and alarm equipment; and encourage improved, simplified and less expensive systems of protection without, however, sacrificing efficiency.

700 Bicyclists Killed

DURING these war years the bicycle has made a come back reminiscent of the Gay 90's. They have raised a new traffic problem. That bicycling is serious business is indicated by the 700-800 killed each year and the 35,000 injured.

Traffic the Topic

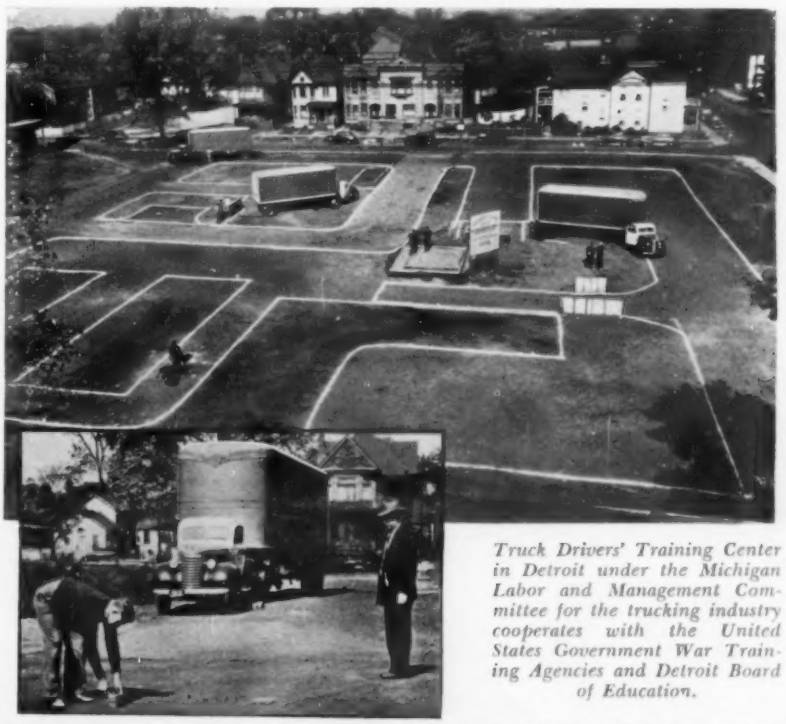
TRAFFIC police problems today and tomorrow is the theme selected for police sessions of the 33rd Annual Safety Congress to be held in Chicago, October 3-5.

Fewer Policemen

TO HELP alleviate the manpower shortage, six of the 14 cities of more than 500,000 population and about one-sixth of the smaller cities are supplementing their regular police forces with auxiliary policemen, according to a survey made by the International City Managers' Association for the 1944 Municipal Year Book.

Personnel turnover in police departments averages 16 percent in the 10-25,000 and 250-500,000 population groups. Accompanying the diminishing personnel were slight increases in entrance salaries ranging up to $170 a year on the median average for all population groups. As a result, average per capita expenditures for police protection went up to $4.03 a year in 1943 from $3.90 in 1942.

Truck Drivers' Training Center



Truck Drivers' Training Center in Detroit under the Michigan Labor and Management Committee for the trucking industry cooperates with the United States Government War Training Agencies and Detroit Board of Education.

Equipment contributed by the Fruehauf Trailer Co., is utilized to train those helping to relieve shortage of drivers needed for transportation of war loads. Other cities have sent delegations to study instruction methods. Inset shows instructors directing proper placing of flares.

Stop--Check and Mail

Please check over the following list of interesting catalogs obtainable free of charge and either write direct to the manufacturers for their literature, or, if you prefer, put a circle around the identifying numbers below to indicate the catalogs you want, mail this coupon to The American City Magazine, 470 Fourth Ave., New York 16, and we will see that catalogs are sent to you without expense or obligation on your part.

6/44

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227	228	229	230	231	232	233	234	235	236
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247	248	249	250	251	252	253	254	255	256
257	258	259	260	261	262	263	264	265	266

Name _____ Position _____

Address _____

Control Pressure in Lines

207. The reduction and regulation of pressure in your water lines is the subject of literature available from the Clayton Manufacturing Co., Alhambra, Calif. Clayton Feather-Touch Valves automatically maintain liquid levels in tanks or sump and provide automatic control of pressure without line hammer, shocks or leaks.

How to Locate Water Waste

208. Conservation of water meets a vital need during these days when water must perform so many tasks. Bulletin 21 issued by The Pitometer Co., 52 Church St., New York 7, N. Y., outlines waste surveys for you as a means of preventing your water systems from wasting water. Also available is Bulletin 20, "Distribution Studies," which will be an aid in planning your post-war water-works rehabilitation program.

Water and Sewer Pipe

209. Many features of Universal cast iron pipe may make it suitable for the water or sewer systems you are planning. Catalogs are available from The Central Foundry Co., 386 Fourth Ave., New York 16, N. Y., discussing the properties of the pipe, the speed with which it can be laid, its flexibility and other features. This pipe for water mains and sewers is supplied with either a hot tar dip, a cement lining, or an enameline lining.

Police Radio Systems

210. Municipalities in the post-war era will rely more and more on police radio systems for the smooth running of their police departments. Police Radio Section, Radio Corporation of America, Camden, N. J., invites inquiries from communities interested in planning a modern police radio system now for a coordinated department after the war.

Aerial Ladders

211. Municipal fire departments can receive data from The Seagrave Corp., Columbus 7, Ohio, discussing the features, and operation of their all-steel aerial ladders.

Cut Sludge Disposal

212. Embodying features of both the Spiractor and the Precipitator, The Permutit Co., Dept. G3, 330 W. 42nd St., New York 18, N. Y., have developed the new split treatment which saves lime, avoids recarbonation and cuts sludge disposal. Further details may be obtained showing how this equipment works, the savings it effects, and how existing lime soda plants may be modernized by the addition of the Spiractor as a first stage.

Chemical for Sewage and Water Treatment

213. The Dow Chemical Co., Midland, Mich., will send you data on the use of Dow ferric chloride for sludge conditioning, sewage coagulation and water purification. A discussion of the specific applications of this product in these fields, just how it works, and the expected results is included.

Pump Data

214. Have you a pump problem? The Aurora Pump Co., 66 Loucks St., Aurora, Ill., are offering a Condensed Catalog listing the various types of pumps they offer and discussing their construction and the way they work.

Meters for Measurement of Flow

215. Bulletin 308 is available from R. W. Sparling, Box 3277, Terminal Annex, Los Angeles 54, Calif., on their main-line meters for the accurate measurement of a wide range of flows. This catalog discusses the design and construction of the meters and their application, and gives installation data.

Disinfection of Mains

216. If consideration is being given to the disinfection of your water mains, data may be secured from Luther and Wood, 310 Chandler Bldg., Washington 5, D. C. They are ready to perform this task on any size of main. Also available from this company is literature on chlorinating equipment, chemicals, and the supervision of chlorination.

Equipment for Water Treatment

217. Water works men who are planning filtration projects either now or for the future will be interested in receiving technical advice which the Roberts Filter Manufacturing Co., 614 Columbia Ave., Darby, Pa., can provide. They offer a complete line of water filtration plants and equipment, Zeolite softeners, pressure filters, and special water treatment equipment.

Equipment for Street and Airport Construction

218. If you are in charge of airport or street construction and maintenance, the set of catalogs published by J. D. Adams Co., Indianapolis 6, Ind., will give you complete information on road-building and earth-moving equipment. The catalogs cover their motor graders, leaning wheel graders, elevating graders, hauling scrapers, tamping rollers and bulldozers, illustrating how they are used to best advantage, their features and specifications.

Steel for Construction Work

219. Joseph T. Ryerson & Son, Inc., Chicago 80, Ill., will send you data on their line of steel products that can be used in your maintenance, replacement or construction work. Bars, shapes, plates, sheets, structurals, mechanical tubing, boiler tubes are a partial list of products that can be used in many of your municipal jobs.

Process for Sewage Treatment

220. Bulletin No. 259 is available from The American Wells Works, Aurora, Ill., on their process of bio-activation for sewage treatment. You will find in this bulletin a description of this process which combines qualities of both the trickling filter and the activated sludge process to produce a suitable effluent low in BOD and suspended solids. This catalog contains typical operating results to show how thoroughly this works.

Wire and Cable to Meet Your Needs

221. If you are having trouble picking the proper wire and cable for your municipal electric system, the Hazard Insulated Wire Works, Division of The Okonite Co., Wilkes-Barre, Pa., offer the services of their engineers to help you specify the correct type to keep your systems functioning properly.

Facts on Water Meters

222. Water Works superintendents will be interested in literature being offered by the Worthington-Gamon Meter Co., 282-296 South St., Newark 5, N. J., on their "Watchdog" water meters. This bulletin shows that these come in standard capacities from 20 gpm up, are frost proof or split case, and that all parts are interchangeable with your present meters of Worthington make.

Plan Good Lighting for Your Community

223. Your community should offer its citizens the best possible street lighting equipment after the war. The Union Metal Manufacturing Co., Canton 5, Ohio, are offering catalogs as well as the advice of their lighting specialists to assist you in mapping out a lighting system for your municipality that will provide greater night time comfort and safety.

(Continued on page 21)

Check These Columns—and Use Coupon on Page 18

(Continued from page 18)

Eliminate Hazards at Crossings

224. Plans to improve the safety record for your community should include the proper traffic signalling at crossings. Aroway Traffic Signals, Inc., P. O. Box 359, Johnson City, Tenn., will send you data on their directional traffic signals. The Aroway traffic signals help simplify your crossing problems since it is possible to direct and signal traffic from one focal point, eliminating the need for traffic signals or scattered instruction signs on the side of the road.

Coating to Control Spread of Fire

225. Complete information is available from the Albi Firepel Corp., 9 Park Place, New York 7, N. Y., on Albi-Firepel "S." You will find this to be a liquid coating that is applied by brush or spray to wood interiors or on both sides of wood used in new construction. Information and illustrations will show you how this coating works to slow down the spread of fire, reduce the amount of smoke, enable small fires to be easily controlled or die out, and delay more vigorous fires until fire departments can take proper charge.

Lubricate Wire Rope

226. The Texas Company, 135 E. 42nd St., New York 17, N. Y., will send you information on Texaco Crater showing how the use of this lubricant on your wire rope will reduce internal friction and wear, keep out moisture, prevent corrosion and keep rope strong.

Keep Your Motorcycles in Good Shape

227. During these days when new equipment cannot be secured, maintenance of present equipment holds an increasingly important place in your municipality. Users of Indian motorcycles can receive from the Indian Motocycle Co., Springfield, Mass., information on the parts and services they have available.

Pumps Tested for Performance

228. A new catalog is available from the Carver Pump Co., Muscatine, Iowa, on Carver Certified pumps. This literature discusses in detail the features of this pump, especially the fact that it is ready for immediate performance as shown through the laboratory tests it has received as well as tests on the job. You will also find information on the design of the pump and the wear it will take.

Alum for Water Purification and Sewage Disposal

229. Water works and sewage plant operators will find that aluminum sulfate is still available from the General Chemical Co., 40 Rector St., New York 6, N. Y. Data may be secured from the company showing how it aids in the problems of water purification and sewage disposal.

Water Connections without Interruption of Service

230. Here is a way to make service connections without disturbing your water service. The A. P. Smith Mfg. Co., East Orange, N. J., will supply you with data on their tapping sleeves for making pressure connections to AWWA standard mains and for pressures up to 150 lbs. per square inch.

Save Wood and Rope from Rot

231. By the application of Cuprinol to wood, municipalities can eliminate the need for constant repairing or replacing of wood structures. Information from Cuprinol, Inc., 26 Spring Lane, Boston 9, Mass., shows how Cuprinol protects the wood from rot and boring insects. It is easily applied either by itself or as a priming coat. Cuprinol is also available for use on fabrics and rope.

A Roller for Many Jobs

232. Municipal street and airport officials will find a variety of uses for the Tandem roller manufactured by the Austin-Western Co., Aurora, Ill. Literature is available illustrating and discussing this roller, its construction features, specifications and listing its many advantages and improvements. These rollers are built in 5- to 8-ton and 8- to 10½-ton sizes.

How to Locate Service Boxes

233. S. F. Ferguson, 11 Hill St., Newark 2, N. J., will supply you with printed matter illustrating the use of their Bob White electronic box locators. The bulletin will show how simply this equipment works, and point out that the equipment operates despite snow or ice, metal, radios, or passing automobiles.

All-Enclosed Truck for Collecting Garbage

234. If the subject of refuse collection trucks is of importance in your community these days, a 6-page illustrated bulletin No. 27 is available from Gar Wood Industries, Inc., Detroit, Mich., on their Load Packer. The operation of this all-enclosed garbage truck and its accommodation for compressing the load is discussed, and the advantages from its main features are set forth.

Modern Water Works Practice

235. Simplex Valve and Meter Co., 6789 Upland St., Philadelphia 42, Pa., have issued a new 12-page folder giving information on their Air Inlet Valve that is installed on thin-walled gravity-flow lines to eliminate the possibility of collapse through sudden drops in pressure. Nomographs and tables are given for the accurate determination of correct positioning, frequency and size of the air inlet valves. Complete details of the principle of installation and operation, and the design and construction of the inlet valve are contained in Bulletin 125.

Concrete Benches for Municipal Parks

236. Officials in charge of municipal parks, playgrounds, pools and golf courses know the need for benches in places around these areas. Art Concrete Works, P. O. Box 417, Pasadena, Calif., will send you complete information on their eight available bench designs. These complete benches are equipped with concrete ends for more sturdy wear.

Welded Steel Pipe

237. An interesting folder is available from American Locomotive Company, Alco Products Division, 30 Church St., New York 8, N. Y. on Alco electric welded steel pipe. Illustrations show on-the-job photographs of installations by various municipalities, and the booklet lists the main features of the pipe. Sizes range from 36" to 84".

Records for Personnel Activities

238. A new folder is being offered by the Government Research Dept., Systems Division, Remington Rand Inc., Buffalo 5, N. Y., on personnel records. The Kardex Civil Service System is described in this booklet and you will find suggested card set-ups for the proper administration of personnel activities in your municipality. Complete details on the operating advantages are illustrated and described in this brochure.

Simplify Your Hose Drying

239. A dryer that will get your fire hose back into working condition in a shorter period of time than the usual drying methods is explained in literature available from The Circul-Air Corp., 6339 E. Palmer Ave., Detroit 11, Mich. This equipment consists of a cabinet working under a principle similar to air conditioning. The folder tells you how it works, gives facts about the equipment, and lists advantages to be gained by municipal fire departments from its use.

Sewer Scooter for Cleaning Sewers

240. Printed matter is available from J. C. Fitzgerald, Box 289, Coral Gables 34, Fla., listing the features of their sewer scooter. You will find this is a self-propelling sewer cleaning machine for which the sewage furnishes the operating power. Data points out that it will pass obstructions over which drag buckets won't go.

Elevated Storage Tanks

241. Here is your answer to some of the questions you have been asking about elevated storage tanks. A new bulletin is being offered by Chicago Bridge & Iron Co., 2127 McCormick Bldg., Chicago 4, Ill., entitled "The Distribution System—Some Basic Considerations in Its Design, Maintenance and Operation." Horton elevated tanks help you provide a reserve in case of power failure, iron out pressure fluctuations, and insure water for fire protection.

Recondition Your Pipelines

242. Information is available from The Centriline Corp., 140 Cedar St., New York 6, N. Y., on the Centriline process for the reconditioning of pipelines 30 inches in diameter or larger. By the simple means of cleaning the main and then applying by centrifugal force a cement mortar lining of required thickness, it is possible to obtain a smooth non-tuberculation service.

Pipe for Water Supply Systems

243. If you are planning the expansion of your water supply system now is the time to secure literature from J. B. Clow & Sons, 201-299 N. Talman Ave. (P. O. Box 6600 A), Chicago 80, Ill., on their Super-deLevaud cast iron pipe and fittings.

Street Lamps for Longer Wear

244. Officials in charge of street lighting will be interested in the information contained in a catalog being offered by the Slater Electric & Mfg. Co., Brooklyn, N. Y. This literature discusses the special features of the lamp that makes it suitable to meet your standards of correct lighting and long lamp life.

Sealer for Expansion Joints

245. Street and airport men will be interested in data from the Servicised Products Corp., 6051 West 65th St., Chicago 38, Ill., on Victory Para-Plastic. This product does the job of sealing expansion joints and is not affected by weather conditions that will undo all the work done on them.

(Continued on page 22)

V stands for VIGILANCE as well as VICTORY

Vigilance today will insure ample WATER supplies for the duration and beyond, while making the smallest possible inroads into supplies of coal, steel and other critical war materials.

Says the A.W.W.A. booklet on "WATER CONSERVATION":—

"Where extensive leak surveys of water systems have been made, large savings in water loss have always resulted."

May we suggest:—

For TODAY: consult PITOMETER'S Bulletin 21, "Water Waste Surveys."

For TOMORROW: let PITOMETER'S Bulletin 20, "Distribution Studies," help you in planning your post-war waterworks rehabilitation program.

PITOMETER Surveys and Distribution Studies are the NEED OF THE HOUR! . . . — Let us help YOU to conserve TODAY and plan for TOMORROW.

THE PITOMETER CO.
Water Distribution Engineers
52 Church Street New York 7, N. Y.

CHECK THIS COLUMN— AND USE COUPON ON PAGE 18

(*Continued from page 21*)

Pipe Finders or Leak Locators

246. A 16-page booklet is being offered by the Fisher Research Laboratory, 1961-63-65 University Ave., Palo Alto, Calif., on their M-Scope equipment. Details are given on the equipment that municipalities are using to advantage for the location of buried pipe and cable, the detection of leaks in water systems, and the finding of valves, covered manholes, services, and boxes.

Mechanized Accounting

247. Have you an accounting problem created by local conditions or by government legislation? If so, you may receive valuable assistance from the Burroughs Adding Machine Co., Detroit 32, Mich., on the best possible form of mechanized accounting method to use in order to meet these conditions.

Equipment for Water Works

248. Literature is available from R. D. Wood Co., 400 Chestnut St., Philadelphia, Pa., on their line of cast iron pipe and fittings, gate valves and fire hydrants. This information should be kept on hand in working up post-war plans. Data on types and sizes, various features and workings are included in this literature.

Precalked Pipe

249. Pipe that can be installed with a minimum of time and labor should be of importance to any community during these hurried days. McWane Cast Iron Pipe Co., Birmingham 2, Ala., will supply you with the details on their precalked pipe. The company points to the fact that precalking permits the installation of the pipe without too much labor and by untrained men. It comes in sizes from 1¼" through 12".

Tight Joints for Water Mains

250. Municipal officials interested in tight joints for water mains without caulking may receive interesting information from The Leadite Co., Girard Trust Co. Bldg., Philadelphia 2, Pa. Learn how Leadite for cast iron water mains needs no melting or pouring and will save you the necessity of digging large bell-holes.

Raise Sunken Concrete

251. Street and airport maintenance officials will be interested in illustrated literature from the Koehring Co., Milwaukee 10, Wis., on the Koehring mud-jack method. This literature will show you how maintenance costs can be cut by the use of this method for the raising of sunken concrete walks, curbs, gutters, driveways, streets and airport runways.

Protect Steel Tanks from Rust

252. Rust and corrosion play havoc with steel tanks. The Rusta Restor Division of The Johnston & Jennings Co., 861 Addison Rd., Cleveland 14, Ohio, will send you literature discussing this electrical method and showing how its principle works to prevent rust from forming.

Chemicals for Water Treatment

253. Literature on Hoodchlor High Test Hypochlorite may be secured from the Hood Chemical Co., Inc., 450 West 31st St., New York 1, N. Y. Instructions and details are given on the use of this chemical in the production of potable water and also in sewage treatment plants, pointing out that it contains over 70 percent of the available chlorine in dustless granular form and retains its strength a year or more.

Machine to Clean Sewers

254. A new catalog is available to sewage-treatment officials from the Expanding Sewer Machine Co., 108 E. Walnut St., Nappanee, Ind., on their sewer cleaning equipment. Details on the expanding root cutter and sewer cleaner show that this may be adjusted in 30 seconds to fit sewers from 8 to 30 inches and will thoroughly clean sediment from all sides of the sewer.

Plan Your Meter Shop with Care

255. In planning your meter shop keep in mind that fewer steps make better work. The Neptune Meter Co., 50 W. 50th St., New York 20, N. Y., offer you data and the services of their experienced representatives who will help you organize your meter repair shop so that you will get the most out of it.

Pipe Line Data

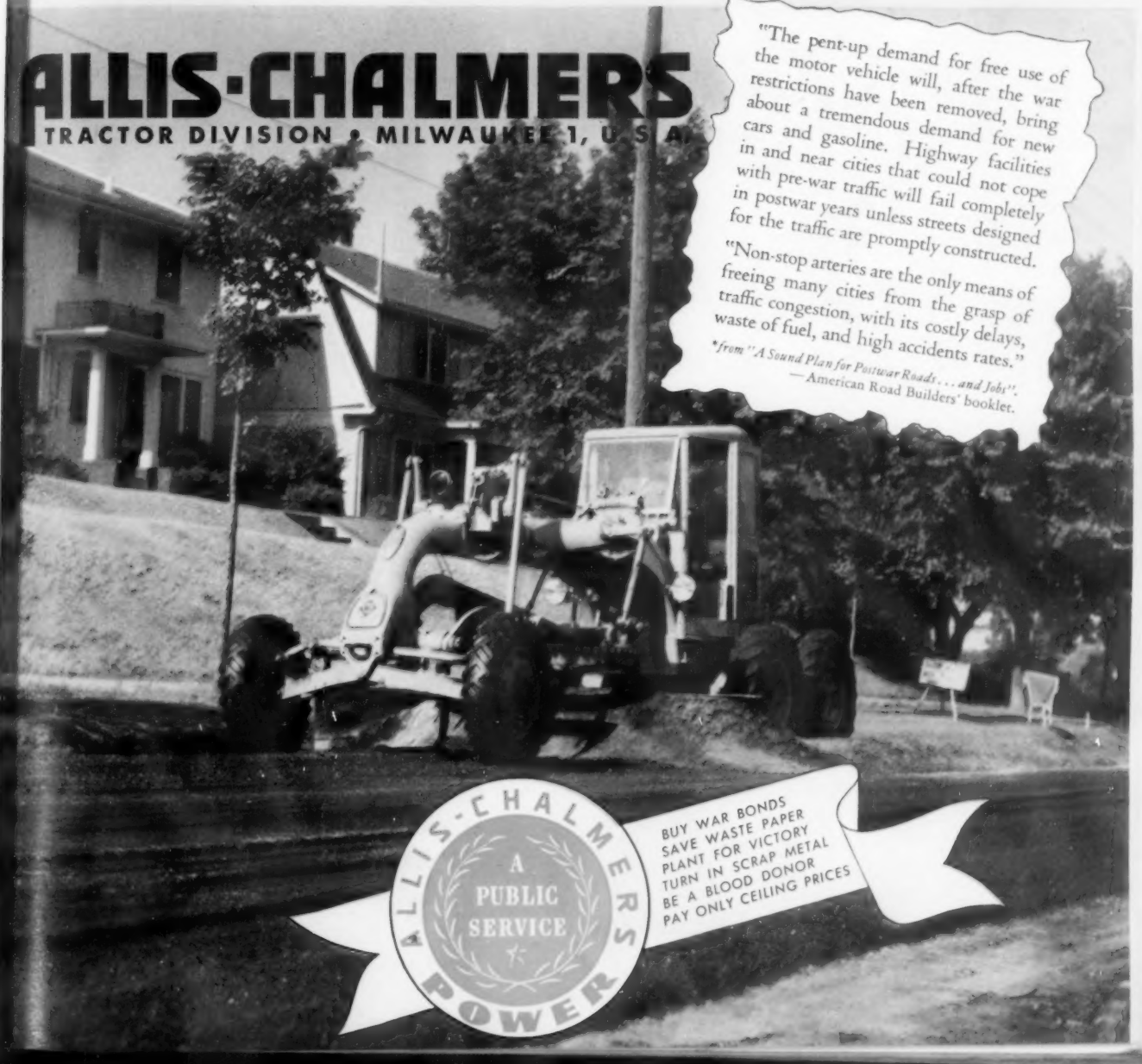
256. If your municipality is in need of larger size water supply mains, or if you need pipe for sanitary sewers, storm drains, culvert and subaqueous lines, data is available from the Lock Joint Pipe Co., Ampere, N. J. This organization manufactures and installs reinforced concrete pressure pipe and concrete pipe of these types, and is ready to help you map out such projects.

(*Continued on page 24*)

GOOD STREETS PAY!

Aside from the practical values, which are many fold and well known, it pays to have good streets from the standpoint of beauty alone. Clean, surfaced streets have a remarkable effect on the appearance of a city . . . and in turn, on the life of its citizens. They create civic pride and build morale . . . besides increasing property values. They make a good impression on tourists, encourage their return and play an important part in attracting new citizens, new business, new establishments. Landscaped parkways to separate opposing lines of traffic are an example of the value many cities place on attractive streets.

Good streets pay . . . and good equipment pays! Money saved from using up-to-date construction machinery can be applied to building extra miles of first-class, surfaced streets. In planning your postwar construction program, figure on Allis-Chalmers' modern line of earth-moving tools . . . and you will assure your community the maximum in savings . . . the greatest number of miles of attractive and more serviceable streets for your budget. Your Allis-Chalmers dealer will be glad to show you how you can profit by using the best type of equipment.


ALLIS-CHALMERS
TRACTOR DIVISION • MILWAUKEE 1, U. S. A.
"The pent-up demand for free use of the motor vehicle will, after the war restrictions have been removed, bring about a tremendous demand for new cars and gasoline. Highway facilities in and near cities that could not cope with pre-war traffic will fail completely in postwar years unless streets designed for the traffic are promptly constructed.
"Non-stop arteries are the only means of freeing many cities from the grasp of traffic congestion, with its costly delays, waste of fuel, and high accidents rates."
*from "A Sound Plan for Postwar Roads . . . and Jobs".
— American Road Builders' booklet.
ALLIS-CHALMERS
A PUBLIC SERVICE
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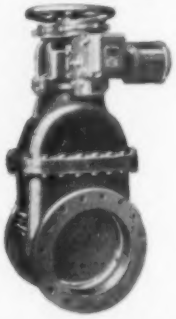


HYDRANTS

Latest "Corey Type"

For information on Fire Hydrants, Gate Valves, Electric and Hydraulic Valves, Check Valves, Sluice Gates, Tapping Valves and Sleeves, Flap Valves, Plug Valves and Shear Gates, write:

IOWA VALVE CO.

General Offices: Hubbell Bldg., Des Moines, Iowa

Plant: Oskaloosa, Iowa

CHECK THIS COLUMN— AND USE COUPON ON PAGE 18

(Continued from page 22)

Publicly-Owned Electric Systems

257. City officials, operators, investors and managers of private and municipal electric systems will find the eighth edition of "Results of Publicly-Owned Electric Systems" just published by Burns & McDonnell Engineering Company, 107 West Linwood Boulevard, Kansas City 2, Mo. (price $10) most helpful. It contains comprehensive records, rates, revenues, valuations and other useful information concerning 757 publicly-owned electric systems, and also a residential rates comparison for every city of over 5,000 population.

Incineration for Disposal of Refuse

258. As the basis for your post-war plans for an incinerator plant in your community, Pittsburgh-Des Moines Steel Co., 3412 Neville Island, Pittsburgh, Pa., are offering Bulletin No. 601 for your guidance. This contains a discussion of municipal refuse disposal methods, incineration, and requirements for satisfactory incineration. Details are given on design and construction features and the various types of Pittsburgh-Des Moines incinerators.

Pipeline Equipment

259. Information on a complete line of pipeline equipment is available to you through the Joseph G. Pollard Co., Inc., 141 Ashland Pl., Brooklyn 1, N. Y. Among the products they have available are the Fisher line of leak detecting and pipe finding equipment.

Fence-Out Trouble

260. Proper fencing of municipal property saves city officials many headaches. The Stewart Iron Works Co., Inc., 1121 Stewart Block, Cincinnati 1, Ohio, offer you the services of their engineers to help you plan the most effective fencing of your property.

Heating and Melting Equipment for Street Work

261. Officials in charge of construction and maintenance on streets and airports will be interested in Bulletin No. 194AC available from the Aeroil Burner Co., Inc., West New York, N. J., on their "Heet-Master" kettle. This equipment, the company points out, effects a real savings on fuel and still does not affect its heating and melting qualities. Catalogs are also available on the company's other equipment including cut-back and emulsion sprayers, portable oil burner and torch outfits, asphalt paving tools and accessories, and asphalt paving tool heaters.

Producing Safe Water

262. Your post-war plans being formulated now should include the subject of safe water for your community. You may receive valuable data from Wallace & Tiernan Co., Inc., Newark 1, N. J., on the methods of break-point chlorination, the Duplicate Units to assist in handling big loads and to meet an emergency, and the Automatic Control of application to maintain a safe chlorine residual throughout the distribution system.

Machines for Sewer Cleaning

263. Would your sewers function more properly if they were cleaned? The Champion Corp., 4716 Sheffield Ave., Hammond, Ind., will send you literature on the O K Champion sewer cleaners discussing the way this equipment works and the advantages you will derive from it. Two sizes of hand-operated machines are ready for immediate shipment.

Tax Billing Systems

264. Simplification of your tax billing system may be accomplished by the use of Sundstrand municipal tax billing machines. Write Underwood Elliott Fisher Co., 1 Park Ave., New York 16, N. Y. for full particulars on how this equipment may be utilized by your community to replace old-fashioned methods that cause confusion and slow up your work.

Repair and Lining with Concrete

265. Municipalities may receive literature giving details on Gunite from the Pressure Concrete Co., 6 Avenue B, Newark, N. J. This principle may be employed for the installation of water tanks, stacks, or buildings or the repair or lining of tunnels, sewers, tanks, reservoirs, and other municipal properties. Literature discusses and illustrates the use of this sand and cement application sprayed on the surface showing the advantages it effects.

Give Your Community Proper Fire Apparatus

266. Municipalities lacking proper fire fighting apparatus may consult with the engineers of Ward-LaFrance Truck Division, Great American Industries, Inc., Elmira, N. Y. These men will help you map out the proper equipment to fill the needs of your community. Post-war plans should cover this important item if you feel your equipment is not up to par.

Vol. LIX, No. 6 The American City June, 1944

When Should a Municipality Operate Its Own Utilities?

The Manager of America's largest municipally owned water and power utility analyzes this question in a way that is applicable to any city, large or small.

By H. A. VAN NORMAN
General Manager and Chief Engineer
Department of Water and Power
Los Angeles, Calif.

WHEN is a municipality justified in entering the "utility business," such as that of furnishing water or electricity?

This question has arisen many times in the minds of conscientious city officials and often is tangled with many complications of both political and social philosophy that often completely overshadow what to my mind is the most important factor—that of economics.

In other words, a city is justified in furnishing these services only if it can provide them more economically than they can be provided by some other means.

"Montage"

To see how this developed in Los Angeles let us go back some 41 years when the city first entered the water supply business. Using the current vernacular of Hollywood, "montage" would be descriptive of Los Angeles at that time. It was spotty—a composite of pueble, hamlet, village, town, and city; colorful, drab, drowsy, alert. Through this admixture of contrasts, however, one could clearly see that the community was "growing up"—beginning to be more than faintly conscious of a worthwhile destiny.

Despite having taken root upon the semi-arid Coastal Plain, within reach of the withered arm of the desert, the water supply upon which in a large measure the future growth of the city depended, was adequate to meet the city's modest needs.

River Source

Los Angeles River was the source of supply and the rights to its waters were vested in the city in perpetuity by mandate of King Carlos III of Spain. Fortunately, those rights could not be relinquished and as time passed, ownership of those waters assumed increasing importance.

But at that time the problem was one of distribution. The open ditches and wooden pipes which constituted the distribution system of that day failed dismally to meet the most modest requirements. The inhabitants were first displeased—then militant. The city dads were forced into action.

Without hesitation they made a great decision in spite of the fact that it entailed a $2,000,000 expenditure. And, believe it or not, such sums were not tossed about with reckless abandon at the beginning of the century.

Prior to this date, the city's water was furnished by the Los Angeles Water Co., under a contract that expired in 1898. That company, owned by a group of local citizens, was granted the right to distribute water for a period of 30 years; but it actually retained control of domestic distribution until 1902.

When the contract expired it was apparent that the resources of this company could not keep pace with the growing demands of our young city, consequently, after four years of debate, litigation, and negotiation, city officials reached an accord with company officials resulting in the purchase of the properties for $2,000,000.

Litigation Costly

Those four intervening years were very costly to the community. While the city continued to develop rapidly, the company, because of uncertainty as to its future failed to make the necessary extensions and repairs. To further aggravate the situation, an 11-year drought, which began in 1893, existed

during these years. There were days when hardly more than an extra day's supply was left in the reservoirs.

I have delineated here an extremely sketchy word picture of conditions that confronted municipal authorities at a time when the city was struggling for continued existence. Now problems of greater import had to be solved. One involved $25,000,000. This like its diminutive $2,000,000 predecessor was met with courage.

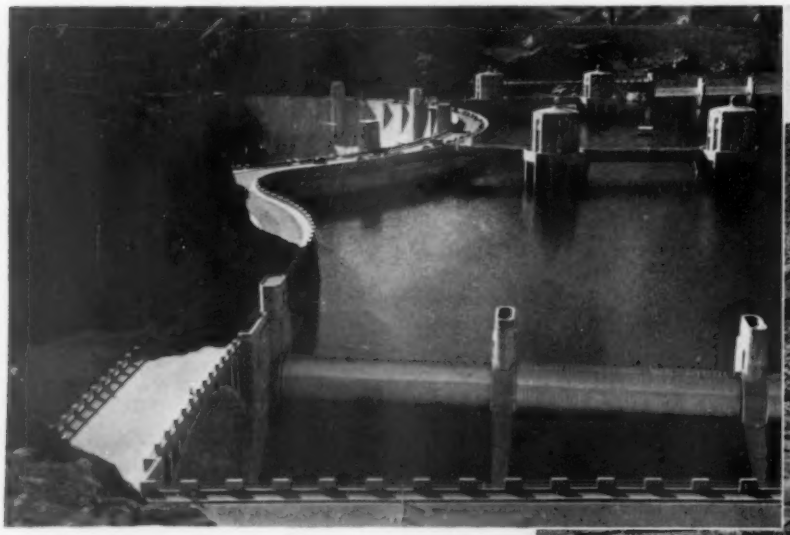
The important thing to remember out of all this is that the creation of a municipal water utility came about in answer to a definite need peculiar to Los Angeles alone. There is no reason to construe it to mean that municipal ownership, as such, is fundamentally more efficient than private ownership. Water obeys the same hydraulic laws regardless of who owns the pipes or pumps.

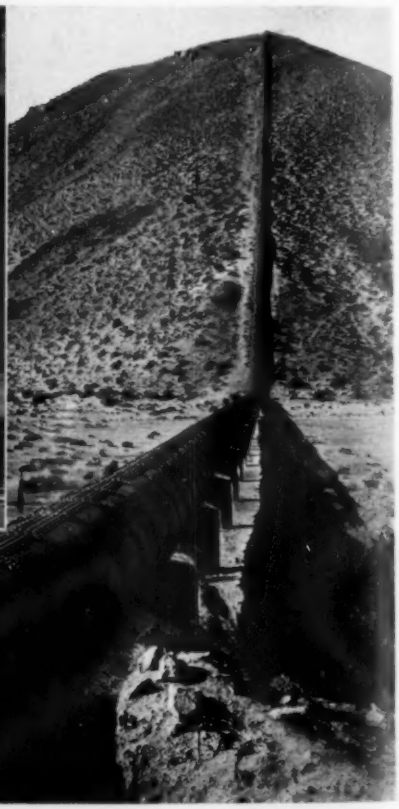
250 Miles for Water

It was now necessary to seek dependable water supplies from distant places. The Los Angeles Aqueduct—extending from the city 250 miles into the High Sierra watershed—was to be built. With its completion, the city's future was securely anchored.

Now let us look at the electric service—by far the largest municipal elec-

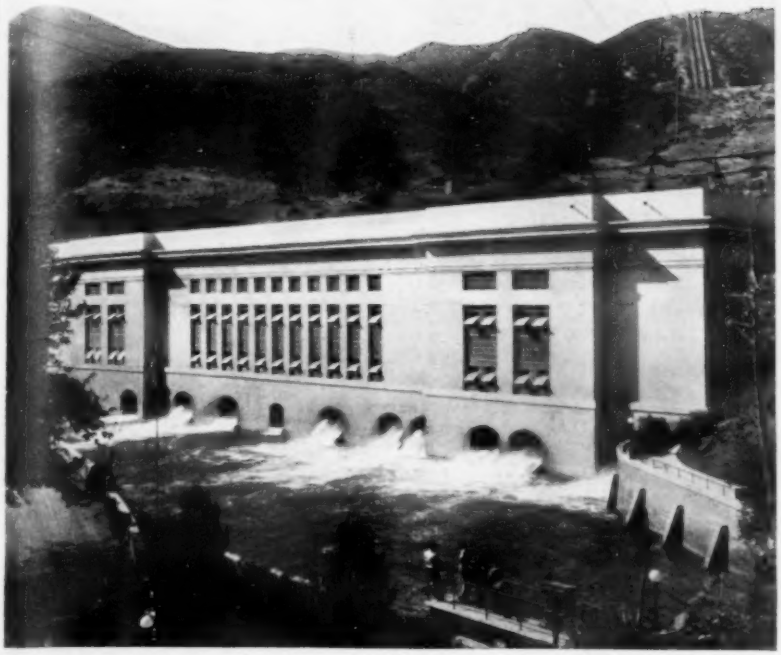
This is a scene of the construction in 1940 when the 10-foot diameter, ¼-inch pipe, was replaced by ⅜-inch pipe of the same diameter.





ABOVE: *Lake Mead behind Boulder Dam is filled almost to capacity in this picture. Note the huge spillway in the foreground. In the background are four intake towers.*

RIGHT: *This line was in operation from 1913 to 1940 supplying Los Angeles with 80 percent of its water. A portion of the line was replaced in 1940 by the heavier pipe shown above.*



This hydro-electric plant has been generating electricity for the city of Los Angeles since 1917.

tric power utility in the country; Los Angles was on the threshold of entering the electric power utility business by virtue of the hydro-electric power available through the aqueduct. The decision of the city to engage in this new undertaking brought it face to face with the age-old question "private vs. public ownership." However, the die was cast in 1917, and the first pole of what was to become a vast network, was set.

Path Not Rosy

As has often happened in the past the municipal power system's path during two or more decades was not rosy. Almost every move it made was contested. Time-consuming, harassing and costly litigation was pending most of the time. Private business did not look upon this venture with favor; whatever it could do to keep out municipal competition was done. That was understandable.

Had not this enterprise been established on the highest principles, supported by irrefutable economic justification and forwarded by persons of ability and integrity, it is certain that it could not have survived.

Questioned Much

Time and time again I have been asked by City Managers, other public officials and private citizens this question: "Our city is thinking seriously of getting into the utility business, will you tell us how Los Angeles did it?" That is not a simple question to answer; but I have always done my best to answer it.

In most cases my answer has been disappointing to the questioner, because they have not heard exactly what they had hoped to hear. There have been failures in the field of public ownership and obviously some of them should not have been undertaken—for the simple reason that there was no sound economic justification for them. Because each of these failures has injured the cause of public ownership, cities should make certain that the undertaking is founded on a firm economic basis.

Conditions Right

It should be borne in mind that conditions peculiar to Los Angeles made it logical, almost inevitable, that the city own its own water and power utilities. Water was the life blood of the community; it was cherished because, in the early days, there had been so little of it. If the city's advancement was not to be limited, it had to tap sources hundreds of miles away.

The economy of the proposition was sound; the question was: Could the people of Los Angeles be shaken in their determination to utilize fully this dynamic natural resource?

All sorts of pressure was used to prevent the city from taking the course it had elected. The days were tense. In the end the city won a complete victory—not because of blind determination to get into the power business, but rather because there was economic justification for it to do so.

Solid Ground

In this instance the leaders supporting municipal ownership were on solid ground. Their position was unassailable. Many of those same leaders later, when importuned to extend municipal ownership into other fields, turned a deaf ear because there appeared to be no good reason for entering such fields. For this attitude they were criticized by municipal ownership extremists who were wont to believe that water and power advocates had "sold out" to private interests.

Los Angeles Record

This is Los Angeles' record in the field of proprietary business:

(1) Conditions were such to amply justify this enterprise. Indeed, any other course would have been sheer folly.

(2) The Department of Water and Power has always dealt fairly with competing companies. Whenever possible, properties were acquired by the process of negotiation. We have recognized private companies' rights and have endeavored to save them from loss or needless injury.

The ownership of Utilities by Los Angeles is firmly established. Our staff would be a credit to any respected business enterprise. Financially it ranks high and is respected by public and private alike. All of this because it had an economically sound beginning.

How Los Angeles Got Its Name

The Los Angeles river was known to our progenitors as "Rio Porciuncula" so called by the Franciscan Fathers who made the discovery on August 2, 1769. That was the feast day of St. Francis, patron saint of the Order of Franciscans. Porciuncula was the name of the hamlet in Italy near which was located a little church called Our Lady of Angels. Hence, ultimately, the name Los Angeles.

Modified Sub-Class A-2 A Glencoe, Ill., Specialty

Street maintenance problems for residential areas were simplified when this Illinois city developed its interesting low-cost surface treatment methods*

By J. A. WILLIAMS
Superintendent of Public Works
Glencoe, Ill.

MODIFIED Sub-Class A-2 surface treatment is the rather formidable title that we have given to our street maintenance method developed during the past several years. Its specific aim has been that of providing a smooth, clean, year-round serviceable street on a slender municipal budget. The "Sub-Class A-2" part of our procedure refers to Illinois Highway Department specifications covering what is substantially a thin, dragged surface treatment using one-half inch aggregate at the rate of 20 to 25 pounds per square yard and either an emulsified asphalt, an asphalt cement, or a cutback asphalt equivalent to RC-2 applied at the rate of 0.2 to 0.25 gallons per square yard. The modifications are exclusively our own. Here is the way it developed.

Glencoe is a residential community of 7,000 population, lying on the shore of Lake Michigan, 20 miles north of Chicago. The town is relatively old, having been chartered in 1869, and our street system is the outgrowth of early roads designed for horse-drawn traffic. Our citizens have endeavored to maintain the rural character of the community and have shown at least a passive resistance to widening. For this reason the streets are narrow and winding and most of them are uncurbed. We have 23 miles of bituminous surfaces ranging in width from 14 to 22 feet.

The pavements vary in age with records regarding their life not very clear. Some were water-bound macadam, some were surfaced with bituminous material, while others were constructed of asphaltic concrete laid on a portland cement concrete base. Because of the narrow width, traffic concentrates on the sides of the pavement breaking down the edges and forming saucer-shaped depressions.

Solution Needed

Up until about 20 years ago our maintenance consisted solely of patching and seal coating. As traffic became heavier, corrugations and undulations began to appear which we attempted to correct by penetration patching. Because of the very character of this work, however, we did not achieve the desired result. Even though we followed the patching with a seal coat, the edges of the patches raveled, the patches were too "fat," and serious "bleeding" occurred. Furthermore, we found that in the winter tire chains broke out a large number of our patches. As a result, the macadam surfaces soon began to disintegrate under heavier traffic. This situation was more serious because funds were not available for reconstruction and it was necessary to do something immediately to conserve the remaining value.

First we tried grading the surfaces, adding new material of the same kind where necessary. Heavy asphaltic road oil, followed by a sand dressing was applied annually for three years. Holes were patched between applications with crushed stone and screenings, and the surface of the patches was oiled. This built up a fairly good oil mat, but it lacked stability and corrugations continued to form.

The following year we rolled the surface to as smooth a condition as possible and applied a hot seal coat of 250 penetration asphalt and pea gravel. This treatment saved the roads but did not prevent the formation of corrugations and depressions. We then applied a "Modified Sub-class A-2" surface treatment, and have had little trouble since.

We made our first use of this method on a widening job ⅜ of a mile long. In this case the existing pavement was 14 feet wide and the crown was fairly true to grade. A water-bound macadam base 10 inches thick and 7 feet wide was constructed on each side of the existing pavement, the surface of the base being brought slightly above the grade of the existing surface to provide for a proper crown on the finished job.

A road mix of ¾-inch crushed stone and RC-2 asphalt, varying in thickness from one to four inches, was then applied and bladed to approximate crown and grade. A standard Illinois Highway Department sub-class A-2 surface treatment was applied and the

A caterpillar auto patrol blades the mixture to proper grade.

How the A-2 mixture looks in a windrow.

resulting surface has been entirely satisfactory.

The results obtained warranted our using a similar treatment on other pavements. It was our observation, however, that the standard specifications would not provide sufficient material to remove the corrugations and undulations existing on these streets. In surfacing the job previously described we did not face any serious problem of smoothing out the surface, as the preceding work was fairly true to crown and grade. With this in mind we developed what I call our "Modified sub-class A-2" specification which produces a surface with an average thickness of 7/8 of an inch. Results proved our conclusions correct and we have followed this specification in all work of this class.

Our "Modified A-2" method is as follows:

Failures in the base are corrected by removing faulty material and replacing with water-bound macadam. These areas are primed with an RC-2 asphalt and a bituminous surface is constructed to bring the surface to the grade of the adjoining pavement.

The pavement is then patched and depressions and undulations removed as far as possible. Loose and matted bituminous material is replaced with new material. We have used both penetration and premix for this purpose. I lean to the use of premix as this material is more adaptable to "feathering out" and depressions can be brought to a more approximate grade.

The surface is then swept with a mechanical sweeper followed by hand brooming where necessary.

Following this a prime coat of from .1 to .2 gallon of RC-2 asphalt is applied per square yard, the rate of application depending on the condition of the surface.

Crushed limestone ranging in size up to 1/2-inch is then applied at the rate of 60 pounds per square yard. Following this, .4 gallon of RC asphalt is applied per square yard immediately after which the aggregate is mixed with a motor driven blade grader, the mixing being continued until the aggregate is completely coated.

The mixture is then bladed to a true crown and grade. We carry a large proportion of the material to the edges of the pavement, in some cases allowing little or none to remain in the center when the existing crown is at proper grade. This permits the sides of the pavement to be built up with sufficient material to prevent future breaking of the edge. Hand work is used to finish out at street and driveway intersections, catch basin inlets, etc., and mixed material is moved to various parts of the job by truck where needed to true up the surface. On uncurbed streets we use a chalk line to define the edge.

The surface is then rolled with a five-ton roller, placing additional material by hand to correct imperfections in grade that appear during the course of the rolling. The mixture is then allowed to cure.

Following this a hot seal coat of .3 gallon of 200-250 penetration asphalt per square yard is applied followed by 20 pounds of pea gravel. The surface is broom dragged, thoroughly rolled and excess aggregate is removed. The road is opened to traffic as soon as there is no danger of picking up.

Care must be exercised in the use of pea gravel to be sure that it is dust free, otherwise one will be swamped with complaints from irate citizens. We have used pea gravel mainly for the reason that our citizens prefer the surface appearance that this material produces.

Maintenance costs on streets treated by this method have been reduced to a minimum. The cost is surprisingly low and a meager budget will go a long way in rehabilitating unsatisfactory pavements.

We have not experienced any "bleeding" or "pushing"; corrugations and undulations have not reappeared, and we seem to have corrected the breaking down at the edges of the pavement. We have treated twelve and one-half miles of pavement in this manner and plan to continue as rapidly as our funds will permit.

Increased Asphalt and Aggregate Per Square Yard

Our "Modified A-2" provides a total of .9 gallon of asphalt per square yard in place of .75 gallon maximum provided in the standard specifications and 80 pounds of aggregate in place of 55 pounds, an increase of 20 and 45 percent respectively.

I have no data on the life of this work as our first job is going into its tenth year and it is not in need of attention.

We have a few miles of pavement that we have been able to maintain with occasional seal coats. In most cases the surfaces are still in such condition that an A-2 treatment is not indicated.

These streets are patched and thoroughly cleaned. An application of one-third gallon of PA-3 asphalt and 20 pounds of pea gravel per square yard is then made. This is followed by broom dragging and rolling. Excess aggregate is removed and the street opened to traffic. Additional cover material is applied from time to time to absorb any excess bituminous material that may appear on the surface.

All of the foregoing work should be done in warm weather, in fact the hotter the better.

It seems to me that our "Modified A-2" treatment is the solution of the maintenance problem of bituminous pavements on secondary roads. The method is simple and requires a minimum of machinery.

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* Based on a paper delivered at the First Illinois State Asphalt Conference, Springfield, Ill., February 24, 1944.

Finishing is required around catch basins and other areas.

The finished job

One City's War Plant—

Its Water Works

How Fayetteville, N. C., built its new 3-mgd water treatment plant to supply a vital, war-boosted population

THERE are a lot of things that the impact of war has done to Fayetteville, N. C. Because of its need to serve important military installation, it caused a boost in population of almost triple. As far as water supply was concerned, it meant an absolutely new plant. The old one had about as much chance of meeting this war-aggravated demand as a pre-war civilian plane against a modern P-38.

Excellent Substitution

Fayetteville's plant shows what designers can do despite the confining restrictions of priorities. The trim brick-and-concrete building shows excellent architectural treatment and would be a credit to any water department regardless of the effect of priorities. The design of the equipment and general layout of the plant demonstrates that imagination and ingenuity are excellent substitutes for materials shortages.

The plant is built around the use of six heavy-duty pumps designed to integrate with the two existing overhead storage tanks and has, for its main treating units, three 1-mgd Roberts filters. Supply is from an impounding reservoir located adjacent to the plant. Two low-lift centrifugal Morris pumps, each having a capacity of 6-mgd, draw the water from the impounding reservoir and pump it to the settling basins. Four Wallace and Tiernan dry chemical feeders apply lime, alum, and activated carbon to the water prior to the settling. There are three of these settling tanks, each having a capacity of 1-mgd and capable of furnishing 4 hours retention.

Cleaning Operation

From the settling tanks, the water proceeds to the Roberts filter with the flow controlled by Iowa gate valves. Operating results thus far have disclosed that the filter operates for 75-100 hours between cleaning. One Morris wash-water pump is utilized to clean the beds. Wallace and Tiernan liquid feed chlorinators apply chlorine and ammonia to the filtered water to obtain a residual of about 0.1 ppm throughout the system.

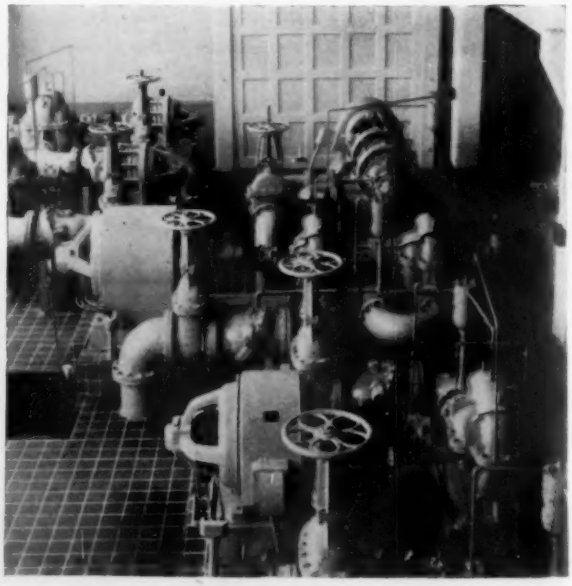
To distribute the water, the plant utilizes four high-duty pumps. Two of these pump against a head of 247 feet and two against a head of 190 feet. The capacity of the pumps vary; one is of 2-mgd while the balance are 3-mgd. Chapman gate and check valves control their operation.

Reserve Storage

The distribution system has a reserve overhead storage of 1½-mg. Two elevated tanks float on the system; one, built 17 years ago will hold 500,000 gallons while the second, erected 3 years back, will hold one million gallons.

Two Simplex venturimeters control the flow through the plant, one measuring the water that enters and the other as it leaves, thus giving control over all pumping and filtering opera-

These 3 control tables regulate the rate of flow through the filter beds which are beyond the railing to the right.



This is a partial view of the attractive pump room. The plant has 2 low-lift centrifugal Morris pumps and 4 high duty pumps.

tions. All these operations are controlled from a Westinghouse switchboard.

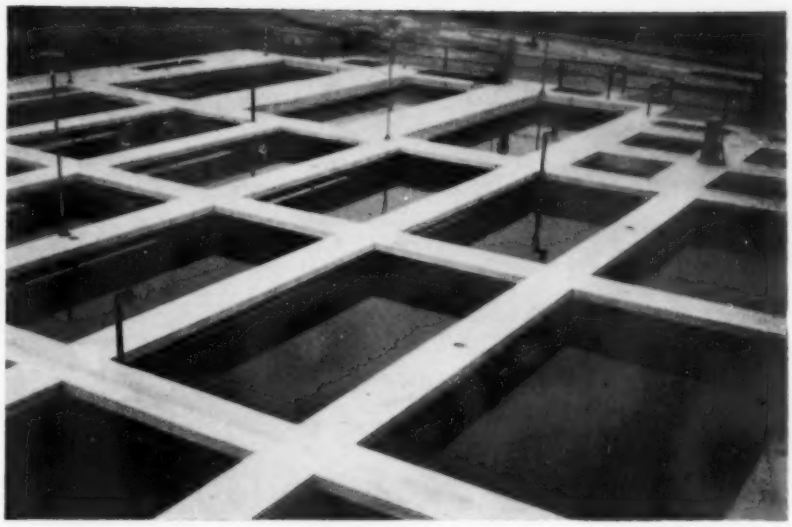
Steel Replaces Wood

Significant in the construction of the plant is the use of wood sash and doors throughout the building. Wood railings and ladders also are used for protection and access, as well as wood stairways. The design was such that the easier-to-maintain steel units could replace them when they became available after the war. One noticeably missing element in the pump room is that of an overhead crane. Brackets have been provided in the concrete columns, however, so that this priority casualty can be supplied later.

This plant, like all wartime construction, is no bigger than it absolutely has to be. The present 3-mgd plant will in the future be reinforced with a second 3-mgd addition with the settling tanks built on the opposite side of the building. In fact, designs have been completed for this addition but have been held up by the War Production Board.

William C. Olsen, consulting engineer, Raleigh, N. C., was the designer for both the present and the contemplated addition. The plant is operated under the supervision of a Board of Public Utilities that include not only the water service but electricity and sewers. J. L. Weathers is the Manager of Utilities.

The cost of the filter plant was $441,313 and was part of a larger program that included $145,044 for new water lines, and $316,000 for sewers.



The settling basins of the Fayetteville water-works plant

A Prophet Passes

THE death, on May 12, of Dr. James Ford, noted sociologist, Harvard professor for 34 years, recalls to his friends of THE AMERICAN CITY an article by him on "Some Fundamentals of Housing Reform," published in this magazine for May 1913. Here, under such headings as "Housing and Public Health," "Housing and Public Safety," "The City Plan and the Housing Problem," "The Taxation of Land Values," and "Public Supervision of Suburban Development," Dr. Ford set forth various fundamentals of housing and neighborhood improvement which are still valid, and some of which have found widespread acceptance during the intervening 31 years.

Writing before any American city had adopted a comprehensive zoning ordinance, Dr. Ford urged that method of land-use control. At a time when the 25 x 100-foot lot was standard practice, he emphasized the serious consequences resulting from lack of elasticity in lot sizes, pointing out that "If the arterial streets of a city are broad and sufficiently straight, and there are occasional broad cross-streets within the residential zones, it should be possible to plan much of the remaining residential land with narrow dirt streets for local service purely, often perhaps with one sidewalk or none, grass strips and trees at the sides and a building line for houses on abutting lots. These streets might wind, which would enhance their beauty; and if on a hillside, ought to wind in some accordance with the contour lines of the hill. In such quarters, lots of varying shapes and sizes would be possible."

Discussing the movement then spreading in Great Britain for municipal slum clearance and public housing projects, Dr. Ford expressed some doubt as to the ability of American cities to guarantee the continued employment of expert men to operate municipal housing departments. In many cities this fear has been overcome during the last few years by the able administration of local housing authorities. But there is little progress to report on another possible way of dealing with unsanitary areas recommended strongly by the Harvard sociologist—the heavy taxation of land values or of the unearned increment:

"As a fiscal measure, the taxation of the unearned increment from land values is, without doubt, a peculiarly just form of taxation and is calculated to bring large annual sums into the city treasury. There is no question that the community is chiefly responsible for increases in land values. It is just, therefore, for the community to appropriate such values, especially if it can do so without placing any hardship upon industry. The only serious difficulties arise in determining a practical method of appropriation and assessment. . . . If the entire tax of the city were levied upon land values, the owners of all property that is improved would find their taxes reduced, but the holders of vacant land or of land uneconomically developed would find their taxes increased, and would be confronted with the necessity of building or of selling to some individual who would be willing to build."

Some 23 years after the above-quoted article was written, Dr. Ford wrote, with the substantial aid of the Phelps-Stokes Fund, of New York, his two-volume work, "Slums and Housing." In this he advocated the "establishment of a housing association for Greater New York, amply endowed, with carefully selected representatives of each of the professional groups and organizations interested in one or another aspect of housing (but not elected by such groups or organizations to represent them) to direct and coordinate housing measures, frame policy, and develop a five-, ten-, or twenty-year plan in which effort would be concentrated primarily upon fundamentals. "Lack of such an association," said Dr. Ford, "results in poor representation of consumer and civic interests, dispersion of funds and effort, and dodging of central issues of futility in attack upon them."

The foregoing recommendation had much to do with the establishment in 1937 of what has become one of New York's most active civic groups—the Citizen's Housing Council of New York, the most recent activity of which is reported on page 95 of this issue.

Subsidy and Taxation for Urban Redevelopment

From a Report on "Housing for the United States after the War," Issued May 1944, by the National Association of Housing Officials*

THE carrying forward of a comprehensive housing program requires public subsidy to make housing available for families whose incomes are too low to permit them otherwise to occupy decent housing. It may also require subsidy to write off whatever part of the cost of any slum-cleared land required for housing, public or private, is in excess of its "use" value—that is, the value determined by the kind of use to which the land is to be put, in accordance with a comprehensive community plan.

It is highly important that these two types of subsidy be kept distinct, even though both types may apply in the same land area, as for example in the acquisition of excess-cost land in blighted neighborhoods for subsidized public housing. Neither private redevelopment nor public housing can properly be charged with the excess land cost.

There should be no concealing of subsidy, and it should be applied as directly as possible to the accomplishment of the desired result.

Local and National Benefits and Responsibility

There is both a local and a national responsibility in the provision of needed subsidy. The immediate benefit is local, both in the elimination of substandard housing and the redevelopment of blighted areas, and in the provision of decent housing for low-income families. In addition to the resulting civic improvement in terms of a more orderly and more attractive city, the local community benefits in sounder land values and in an urban pattern that is capable of more economical and efficient provision of public facilities and services. It benefits by the elimination of conditions that contribute to high rates of juvenile delinquency, crime, disease, and infant mortality, and to excessive fire hazard. Beyond these measurable benefits, the community gains intangibly in the contribution made by better housing to human happiness and to a pride in home that makes for a greater sense of community responsibility on the part of the individual citizen.

The national benefit is found in the contribution that urban redevelopment and better housing make to the national welfare in sounder citizenship, a healthier citizenry, and better cities throughout the nation. Furthermore, whatever responsibility the localities may have because of their failure to establish and maintain effective controls over the use of land and the condition of dwellings and to provide well balanced and properly serviced neighborhoods, the basic cause of the bad housing in which low-income families are forced to live is lack of sufficient national income, so distributed that every responsible family is able to obtain the minimum essentials of satisfactory living. The factors responsible for the size and distribution of the national income are either nation-wide or interrelated within the nation.

A further national benefit is found in the importance of housing production to the national economy. Although housing production cannot be expected to be the balance wheel for the whole economy, it does provide employment and outlets for investment capital in the durable goods industries, and can contribute importantly to this vital sector of the economy. Public housing lends itself particularly to acceleration when needed as a stimulus to employment and investment.

Taxation Policy

Under present conditions, the most practical method of providing the local contribution to subsidy for public housing is tax reduction, accomplished by tax exemption for the physical properties of the development, with cash payments made to the local government in lieu of taxes. Stated in reverse, the reason for tax exemption for public housing is not that the properties are publicly owned, but that tax exemption is the most feasible and effective means of providing necessary local subsidy. The amount to be paid in lieu of taxes should be determined in accordance with uniform and equitable formulae.

One reason for considerable dissatisfaction with the present public housing taxation policy derives from lack of clear understanding of the necessity for subsidy under present conditions and of the purpose of tax exemption in providing part of it. In addition to explaining clearly the need for subsidy, the best way to overcome misunderstanding with respect to tax exemption is though frank accounting as to how much the net tax exemption on a particular housing development actually amounts to, compared with the total subsidy requirements.

The two alternative methods of providing federal subsidy for public housing that are at present available are the payment of capital grants and the payment of annual contributions. The capital grant method has not been used; as provided for in the United States Housing Act of 1937, it would result in an insufficient reduction in annual cost. Furthermore, capital grants are incapable of adjustment to varying annual need. Annual contributions alone have been used as federal subsidy in aid of the housing developments of local housing authorities.

Annual contributions are also the form of subsidy used in the only state-aided public housing program in the country, that of the State of New York.

Subsidy to Reduce Land Costs

While methods for both local and federal subsidy for public housing are well established, the idea of subsidy directed specifically toward reduction of the cost of land for redevelopment purposes is in its infancy. Local subsidy for this purpose is provided for in urban redevelopment laws in several states, through the medium of tax concessions. There is no provision for federal subsidy for this purpose apart from low-rent housing, although there are two bills on the subject now before Congress, and several related proposals are under discussion by various interested groups. Federal tax or interest concessions, which are among the current proposals, are forms of subsidy. So are losses that would be met under any system that might be developed for guarantees (as distinguished from actuarially sound mutual insurance) of bond or mortgage payments.

Proposals for subsidy, whether federal, state, or local, for the reduction of land cost for urban redevelopment, and proposals for other forms of subsidy for the reduction of rents in public housing than those now available, should be examined according to the following criteria: (1) is the amount, as proposed to be applied, sufficient to accomplish the purpose, i.e., will the aggregate amount of applicable subsidies achieve the desired reduction in rents or land costs, as the case may be? (2) does the subsidy go as directly as possible to the accomplishment of the

* See page 143 of this issue.

object sought? (3) will the subsidy achieve the maximum reduction for the amount used? (4) is the method sufficiently flexible so that the amount of subsidy can readily be adjusted to the need, determined on an annual basis? The latter consideration would indicate that the subsidy should be applied against annual cost, rather than in the form of capital grants.

Relation of Subsidy to Rents

In considering changes that might be made in the amount of subsidy provided for rent reduction, and in the respective portions of subsidy to be provided by the federal and local governments, local attitudes will undoubtedly have weight. The relation of subsidy to rents should always be borne in mind, however. Increase in payments in lieu of taxes, unless offset by additional subsidy from other sources, will inevitably have the effect of increasing rents, and, if too great, may render the housing incapable of serving the low-income families who are most in need of it. Payment of full ad valorem taxes (apart from the effect of this on the payment of federal annual contributions, which are conditioned on local subsidy to the amount of at least 20 percent of the amount of the federal subsidy) would result in rent increases to the extent that rentals would be uncomfortably close to those of some private housing.

Consideration should also be given to the effect of payment of local subsidy on local governmental revenues; more specifically, the effect of tax exemption as a form of local subsidy on the local tax base.

The solution is not easy. At the outset, it should be recognized that the taxes that the local community loses on a tax-exempt public housing project cannot by any stretch of the imagination be considered to be ad valorem taxes on the completed development less payments made in lieu of taxes. Except as a result of subsidy—both federal and local—the development would not exist: it does not represent a capital investment that the unaided rent-paying ability of the occupants could have brought about. What the community does lose is the taxes on the dwellings that those families were previously occupying, assuming that the new housing has replaced the old (wherever located in the community), or the equivalent of such taxes if the old housing becomes occupied as a result of increased demand—and also assuming no in-lieu payments. If in-lieu payments are made in an amount equal to taxes on the previously occupied dwellings, the locality not only has lost nothing, but has gained in the reduction of governmental costs that always accompanies public housing. In such an event, it certainly can not be said that the taxpaying property of the community is carrying the load of subsidy.

The payments made in lieu of taxes on public housing should be in terms of the ability of the tenants to pay. This ability is reflected in the rental income of the development, and the amount to be paid can, therefore, be expressed in a percentage of this income. The present policy of the Federal Public Housing Authority authorizes payments in lieu of taxes on low-rent housing equal to 5 percent of shelter rents. This amount could undoubtedly be increased without adversely affecting the low-rent character of the housing.*

It might well be that public housing by making payments in lieu of taxes which are based on ability to pay, can be the forerunner of improvements in existing procedures that will be of widespread benefit to the whole field of housing investment, production, and ownership.

New Sources of Revenue Needed

Reforms in the taxation of private residential property are badly needed. The fact that the average residential neighborhood, taken by itself, cannot "pay its own way" results in serious inequalities when an urban community is divided among a number of local governmental jurisdictions. In such a division it inevitably occurs that some of the jurisdictions consist predominantly of moderate- to lower-value residential areas, and are thus seriously handicapped in providing necessary public facilities and services. Some method should be established for equalizing the cost of providing at least minimum facilities and services over the entire area of an urban community, regardless of the interposition of local political boundary lines.

After all this, the final problem still remains unsolved — the serious deficiencies in the present system of local taxation that places the principal part of the burden on real estate. To be sure, owner-occupied homes have a distinct advantage under present federal income tax laws, in that the value of rental equivalent for such homes is not included in income, while mortgage payments are deductible from income. In general, however, continuing demands for increased local governmental services and extensive urban improvements must look to sources of revenue in addition to that derived from real estate.

The answer to the problem is far beyond the scope of this report. Some of the ablest minds of the nation in the field of public finance and taxation are grappling with it. Part of the answer may lie in the localities themselves seeking other sources of revenue. But many of these have already been preempted by the state and federal governments. It may lie partly in local sharing in state and federal revenues, with the function of the state and federal governments in this regard limited to that of collection and disbursement, without accompanying control—if this be possible. Suffice it to say that probably no other single reform would do more to lift an impeding burden from private investment in housing and remove an important obstacle to the achieving of better cities than would the provision of sources of substantial revenue in addition to real estate taxation.

Housing's Golden Age

No period in the nation's history has had such possibilities for doing great things in housing as does that which lies ahead. We shall have labor seeking jobs . . . and materials crying for a market. Investment funds will be abundantly available. More than ever before, people will have accumulated savings to put into the purchase of homes and there is now better machinery for helping them to buy those homes. Leading business executives and realtors are urging urban redevelopment. The movement for wise city planning is gathering momentum. Public opinion is overwhelmingly in favor of getting rid of the slums. From our extensive experience in large-scale planning and building we know better than ever before how to provide acceptable housing for our low-income families.

In many of Europe's great cities bombs have done the job of slum elimination, cruelly but effectively. Those demolished areas will be replanned and rebuilt on modern lines. Must we wait for demolition by bombs in some future war, or shall we set for our country the goal of complete eradication of urban and rural slums during the next two decades? With private enterprise, government, and labor working as understanding partners and supported and encouraged by intelligent and vocal public opinion, that goal can be attained.

The post-war years can be our "golden age" in housing.

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* A NAHO Committee on Housing Subsidy and Finance has recommended that the authorized payment be increased to 10 percent of shelter rents.

Any extensive revision in the tax system will be a long process. Even so, much more public housing than the maximum amount now found in any community could be provided before there would be any material effect on local tax rates, particularly as reductions in local governmental costs as a result of public housing would begin to make themselves felt in substantial measure.

A post-war public housing program must meet the crying needs of families now living under substandard conditions and must also provide part of the answer to the insistent demand for decent housing that will come from persons returning from the armed forces, many of whom will require assistance to obtain it. At the same time, it is expected that extensive programs of urban redevelopment will be undertaken. It may be that the provision of adequate local subsidy for all these purposes under the existing federal-local pattern will lie beyond the ability of the local community. It may be necessary to rely on an increase in the relative amount of subsidy to be furnished by the federal government, since its sources of revenue are much broader than those available to localities. Or states might assume the responsibility of providing subsidy to supplement that furnished locally and thus relieve the federal government of this additional burden at a time when paying for the war will be a primary consideration.

Planning Puerto Rico's Future

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IT will doubtless come as a surprise to those whose information is limited to what they read in the daily press, that some of the most broad-gauge planning being done in this hemisphere currently is emanating from the Island of Puerto Rico.

The Insular Planning Law passed in 1942 authorized the appointment of a novel and effective Planning Board. The terms of the law eliminate many of the obstacles with which city, county and state planning agencies have to contend in the United States. The Board's jurisdiction extends over the entire Island, including authorization either to do itself, or to delegate to local agencies, the planning and zoning of the various municipalities, in addition to its primary responsibility for Island-wide facilities. The Board also is empowered to define and plan for metropolitan areas as single entities, thus eliminating the problems of jurisdiction plaguing many continental planning agencies.

Six-Year Financial Program

Outstanding among the Board's duties is the annual preparation of a six-year *financial program* for the Island. This is not limited to the capital budgeting and programming now common to planning agencies in this country. On the contrary, as its title implies, it embraces the entire range of the Insular government's financial operations, including, in addition to capital projects, recommendations as to current expenditures, financing of special authorities, and estimates and recommendations as to income for meeting the costs of all of these.

The Board's first Six-Year Financial Program includes two principal groups of proposals. Of primary importance are those for bolstering the Island's economy and achieving a more equitable participation in it.

Over half of Puerto Rico's farm laborers are landless squatters, reflecting the fact that 3 percent of the landowners hold 50 percent of the farm land. A Land Authority, organized to give effect to the 40-year-old law limiting corporate holdings to 500 acres, has been restrained in its operations by inadequate financing. The Board's Program would allocate $33,000,000 to the Authority, a sum which, when supplemented by private financing, would complete the entire land program, fundamentally reorganizing and strengthening the Island's rural economy.

Development of Industry

A second principal need is the development of industry, insofar as practicable, to supply both goods and employment. The Puerto Rico Development Company and a Development Bank, jointly charged with fostering manufacturing and industry, have likewise been held back by lack of funds, although it has been already demonstrated that certain limited industrial opportunities exist. To them the Board would allocate $12,500,000. Supplemented by private financing, this program, too, could then be pushed vigorously ahead.

Harbor improvements and airports, reforestation, irrigation, fisheries, and agricultural improvements complete the list of projects looking toward a sounder economy for the Island.

Improvement of Public Services

Aside from these, the program's chief emphasis is on a general improvement of essential public services. Because of deplorable sanitary conditions, pure water supplies and adequate sewerage, both urban and rural, may be considered to head the list. Enough money is set up to do both jobs, on at least minimum standards.

Projects for the prevention and cure of illness come next. At least a dozen general, tuberculosis and mental hospital projects are included, with as many more extensions to existing institutions. There are also a number of health centers and malaria control stations.

In the field of education, substantial improvement would be effected at all levels. The program calls for 4,000 new schoolrooms, with many additional projects at the secondary and college levels.

About $25,000,000 is set up for highways, including farm-to-market roads, main highways, and a beginning on a modern expressway system for the San Juan metropolitan area.

Housing and Public Buildings

In the field of housing, besides earmarking $500,000 annually in anticipation of a further federal program, the Board recommends over $1,000,000 annually for financing strictly Insular housing operations.

Public buildings, which will figure largely in subsequent programs, were kept at this time to the preliminary study stage, in order to determine first the general needs and desirable locations. A beginning is proposed on a park and forest system, until now almost wholly neglected in Puerto Rico.

All in all, this first Financial Program of the Insular Planning Board not only sets a new mark in comprehensiveness; it also gives encouraging evidence that the Puerto Ricans intend to take constructive steps for the improvement of the deplorable conditions that have been permitted to develop there. As such it warrants the sympathetic interest of all Americans. In fact, it seems not unlikely that the old story of the backward area suddenly pointing the way to our more "advanced" communities may be repeated here.

Syracuse, N. Y., adopts

The Good Neighbor Policy

in Pump House Construction and at the same time whips a troublesome water supply problem

WHEN you move into a better-class residential neighborhood, it is a good idea to watch your manners. You are expected to live a quiet life, not create any objectionable nuisance, and generally conduct yourself as a good citizen should. Syracuse, N. Y., took all these factors into consideration when water-works officials in that city recently completed a new badly needed pumping station.

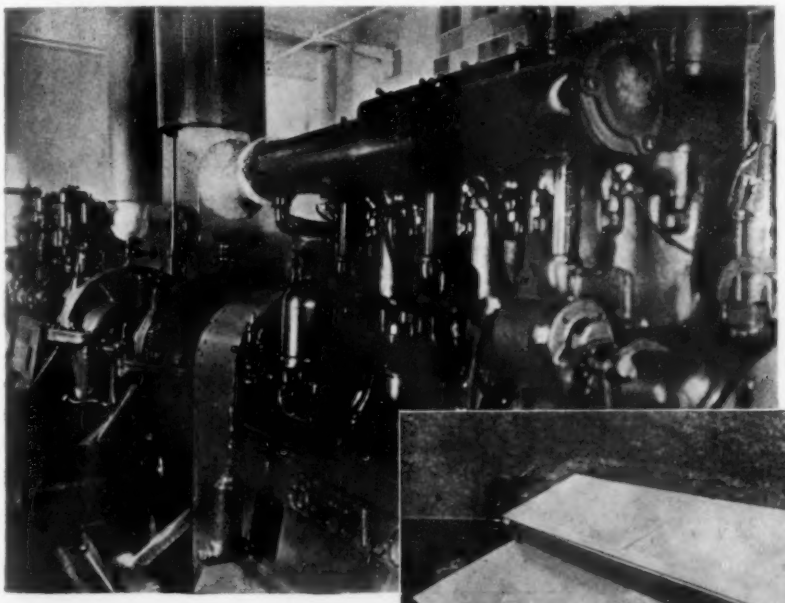
This well-mannered pumping station serves as an equalizer in Syracuse's distribution system. The city lies on a series of hills and valleys; the residents in the valley receive their supply from large distribution reservoirs, one of 109 mg capacity and the other of 125 mg, located in some of the better residential areas. These reservoirs in turn are replenished by Skaneateles Lake through 19 miles of 30-inch and 11 miles of 36-inch gravity-fed conduit. The inhabitants of the higher sections, however, obtain their supplies through another 30-inch conduit, also gravity fed, which discharges to standpipes, the overflows of which are about 109 feet above the low-service reservoirs. A series of gate valves separate the two systems.

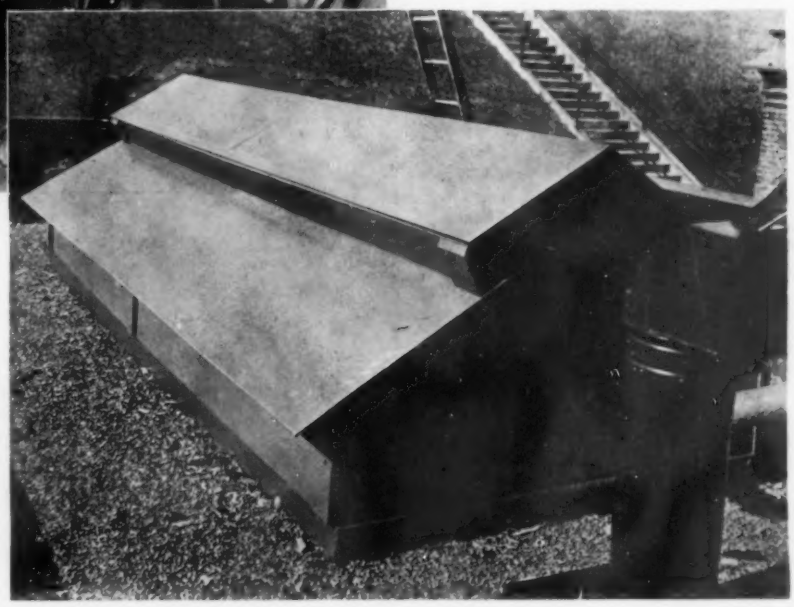
Why the Station Was Required

Under normal conditions the high service areas and storage units are amply supplied by a high service conduit with a maximum capacity of 12 mgd. However, as most water-works men know, the "normal" conditions don't occur very often and the extremes are what they must concern themselves with. Such occurrences as a break in the high-service conduit or a need to discharge the high-service conduit to a low-service reservoir in order to obtain the maximum flow of lake water to the city, are examples.

In an emergency the water department found it necessary to reinforce the high-service area by pumping from one of the low-service reservoirs. For some time in the past they had been using two electrically-driven centrifugal pumps, one of a capacity of 3½, the other of 4½ mgd. These, of course, operated quietly without disturbance to the neighborhood. But they required a heavy electrical demand charge and thus were expensive to maintain.

This helped the city over the distribution humps until the summer of 1941 when the average daily consumption of the high service hovered around 5.8 mgd with 24-hour peaks of 9 and 10 mgd. The highest monthly average was 6.8 mgd. This pushed the top out of the capacities of the transmission mains, the standpipes, and





ABOVE: *Gasoline engines supply power for the two standby pumps used in the Syracuse, N. Y., water distribution system. Since the pumping station was located in an attractive residential area it required special care in design and construction to eliminate noise from the engines.*

RIGHT: *Waterproof housing on top of the pumping station covers the engine silencers, forces draft exhaust and supplies ventilation for the building, thereby allowing windows to be sealed and doors to remain closed regardless of the weather.*

the reserve pumps as well, and caused City Engineer Nelson F. Pitts, in charge of the Water Department, some uncomfortable moments. When he became convinced that this condition was going to persist, he decided that the only thing left for the department to do was to storm the citadels of WPB and the pump manufacturers and get some heavier equipment.

Economical Operation Provided

Engineer Pitts aimed at more economical operation as well as added capacity. Since these pumps were to be for standby service primarily he decided to use gasoline engines for motor power thus eliminating the high electrical standby charge. A capacity of 12 mgd, he felt, would be adequate.

After obtaining the necessary priority from the War Production Board, the city awarded a contract to the Worthington Pump and Machinery Company for two 6-mgd centrifugal pumps powered with Buffalo gasoline engines. The engines are 6-cylinder and develop about 215 hp at the operating speed of 1,200 rpm. Twelve-inch pumps were used having 14-inch bottom suctions and 12-inch discharge connections. The bottom suction type of pump was used for this particular installation on account of the limited space in the existing pump house.

The use of gasoline engines in these residential areas, however, created some added problems that the electric motors avoided. Engine noise was one and creation of a nuisance by ground vibration was another. Neither could be tolerated in this particular neighborhood. To minimize engine vibrations, pump foundations were cast separately from building foundations, and the floor was heavily insulated with mastic joints. Flexible, mechanical joints with rubber gaskets were used in all suction and discharge connections for the same reason.

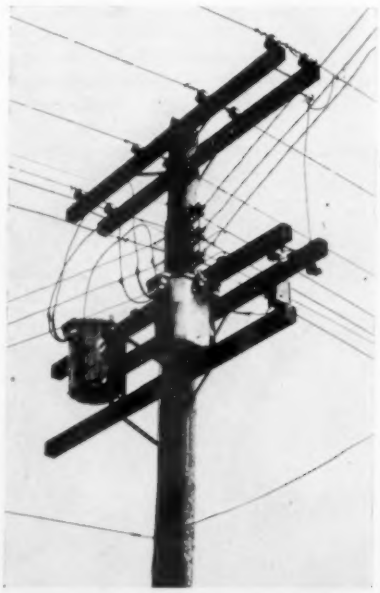
The elimination of objectionable noise from the exhaust of the engines required particularly careful work, especially since the reservoir embankment rises high above the roof level of the pump house and immediately behind the building, thus intensifying any noise that might be created. Studies of silencer performance assured engineer Pitts that this problem could be controlled. To do this he used 14-inch Maxim Silencers designed to reduce the exhaust noise to an unobjectional 0.1 decible measured 20 feet from the source. The mufflers were first installed inside the pump house, but they radiated too much heat for practical working conditions, and were therefore, relocated on the roof and housed under a suitable non-inflammable cover which protects them from the weather.

"These silencers have proved to be all that is claimed for them," Engineer Pitts states. "The noise from the exhaust at ground level around the pump house is negligible."

Added precautions in pump house construction also were taken to control the noise. Although the pump house is of masonry and brick construction with air spaces in the walls, the noise of some of the reciprocating parts of the engines and valve mechanism was noticeable in the vicinity of the pump house. The situation was worse of course when the doors and windows were open to provide circulation of air in the pump room for the comfort of the operator in summer. This problem was solved by installing double windows, keeping the door closed, and installing a large ventilating fan which takes a large volume of air from outdoors, passes it through the valve chambers beneath the pump house, up through the pump room, and out through ventilators in the roof. This system satisfactorily provides the necessary ventilators and results in material reduction in objectionable mechanical noises.

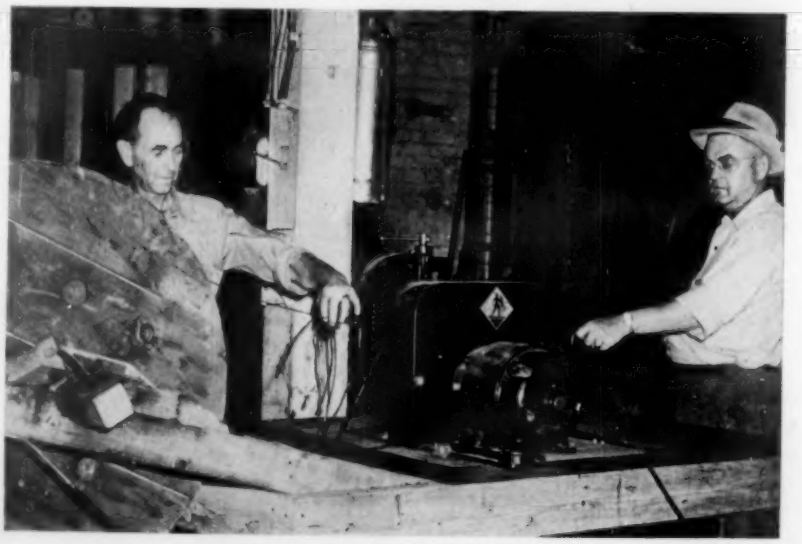
Each pump on test showed a capacity of better than 6.5 mgd at normal speeds, and about 6 mgd when operated in parallel under normal conditions, a total of 12 mgd. Thus the city now feels safe that there will be an adequate reserve pumping capacity for any emergency that might arise, and that the new pumping station will take its place in this residential community the way a good neighbor should.

The Knoxville, Tenn., Municipal Electric System Conserves Critical Material



RIGHT: *Two 5-kva transformers that the city had on hand carry a 10 kva load.*

BELOW: *A wire stripping machine removes frayed and damaged covering from old wire. The stripped wire is examined for pitting or damage, defective parts cut out, the wire spliced and reused as bare conductor in primary, secondary and as a natural wire in three-wire services.*



What it Takes to Build

A Small Primary Sewage Treatment Plant

Next to an important state highway this plant must treat sewage to avoid any possible odor nuisance.

By ROBERT G. HARDING
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A detailed discussion of the new sewage treatment plant serving Preston, Idaho, disclosing some of the characteristics that make its design different from that of a plant of larger capacity

LIKE the axle that didn't squeak until it needed grease, the city officials of the City of Preston, Idaho, did not know that they had a sewage treatment problem nor that their sewage treatment facilities had long ceased to function until they had become somewhat provoked by the persistent complaints from certain irrigation companies which took water from the small stream into which the effluent from the septic tank was coming.

Through the good services of the Idaho Division of Public Health, whose engineers conducted routine tests and inspections, these officials learned of the need for additional sewage treatment facilities. Under the direction of W. V. Leonard, State Sanitary Engineer, and W. L. Claire, his deputy, who later succeeded him, the Division conducted a sanitary survey to determine sewage flow, pH, settleable solids, BOD, dissolved oxygen and chlorine demand. These data, tabulated and turned over to the city officials, contained the recommendation that a sanitary engineer be employed to design a suitable sewage treatment plant. To this the city agreed, directing the engineer to take into consideration in his design (1) minimum requirements of the State Board of Health for treatment, (2) the dilute character of sewage to be handled, (3) permissible character and disposition of final effluent, and (4) relocation of treatment facilities to permit sewering the south portion of the city.

The City of Preston is situated in the extreme southeastern corner of the state at an elevation of 4,710 feet above sea level. It is a thriving rural community and is the business center of a large agricultural district devoted mainly to the production of sugar beets, canning peas, forage crops, dry land wheat, dairying, and livestock.

Site Chosen

The existing facilities consisted only of sewage service to the north two-thirds portion of the city. A septic tank on the east edge of the city furnished the only treatment discharging a questionable effluent down the course of Worm Creek into an irrigation canal. Since the general slope of the old lake bed delta, upon which the city is built, is toward the south it was not possible to carry sewage from the south side of the city into the existing outfall line. Hence, it was necessary to select a site for the treatment plant further down Worm Creek where a separate outfall, serving the south section, could reach a junction with the north side outfall. The most favorable and convenient location appeared to be along the channel of Worm Creek just before it crossed U. S. Highway No. 91 about two miles southeasterly from the city.

This location, however, raised the question of odors which might be objectionable to traffic on U. S. Highway 91, a busy thoroughfare, and to the nearby residents, the closest of which was approximately 400 feet from the proposed site.

The design, therefore, attempted to control the odor nuisance by proper attention to the hydraulics of flow through the plant, plus provision for pre-chlorination of the incoming sewage and chlorination of the effluent.

Another necessary step in odor control was the replacement of the outfall line from the old septic tank to the new site and by-passing the septic tank. This outfall line had been laid "farmer fashion" as a flow line not to line nor grade and without manholes. Much septic action was taking place in the low spots and stoppages were relieved only by breaking into the pipe.

Accordingly, a new 12-inch and 15-inch concrete pipe was installed with a gradient to permit a flow rate of 1.75 mgd flowing full. The length of new pipe installed to the treatment plant was 7,115 feet together with replacement of an additional 1,300 feet of outlet piping below the plant. The new South Side outfall, partly completed but suspended for the duration, has a maximum flow capacity of 1.95 mgd. This is also a 12-inch concrete line.

The plant was designed to serve a population of 6,000. The present population is slightly over 5,000 with about 3,200 population connected. Completion of the south side project will add an additional 1,500 population. Since the water service is unmetered and the city is blessed with an abundant gravity supply (about 700 gallons per capita per day) it was known that the plant would receive a copious flow of dilute sewage. This flow had been measured at 150 gcd with no diminution of flow to be anticipated. Accordingly, the design utilized a flow of 150 gcd, resulting in a plant capacity of .90 mgd. At this figure the detention period in the clariflocculator is 2.5 hours.

Actually the flow has averaged about .75 mgd or 235 gcd for the 3,200 population connected. If the present plans to meter the city are carried out, the per capita consumption will be considerably reduced.

The sludge produced, however, was estimated as only the normal amount for a rural community with little industrial sewage. The two digesters provide available sludge capacity of 2.55 cubic feet per capita for the designated population.

The sludge-drying beds have a capacity of .74 square feet per capita of population now served or .40 square feet of design population. This apparently will be adequate for some time to come and can be increased as required.

Extent of Treatment

In deciding on the extent of treatment the disposition of the effluent was the controlling factor under the limitation of minimum requirements. During the irrigation season the outlet empties into an irrigation canal where it is diluted in a ratio of from 1:10 to 1:20 and used on farms devoted to the production of general farm crops within one to five miles of the plant. In the winter the effluent discharges into Worm Creek thence, after a five-mile flow, into Cub River and eight miles further down it empties into Bear River where the dilution is in excess of 1:500 in lowest flow.

Fortunately, and as is common in western mountain valleys, river water, after it reaches the valley floor, is not used for culinary purposes (mountain streams or springs are tapped at their source) nor for bathing or fish culture. Consequently, disposal by dilution in these streams provides an adequate and justified disposition of the effluent. However, the plant can provide full chlorination of the effluent but will use this only in periods of low stream flow when dilution may be unsatisfactory.

Primary Treatment

In view of these considerations, the selected design utilizes primary treatment only, together with two-stage digestion, adequate winter sludge storage and with provision for pre-chlorination of incoming raw sewage and chlorination of the effluent.

In the description which follows, the writer asks the reader's forebearance of his discussion of somewhat trivial matters but he has, for some time, noted the woeful lack of information regarding the design of small plants—and small plants and small flows introduce problems not encountered in their larger cousins.

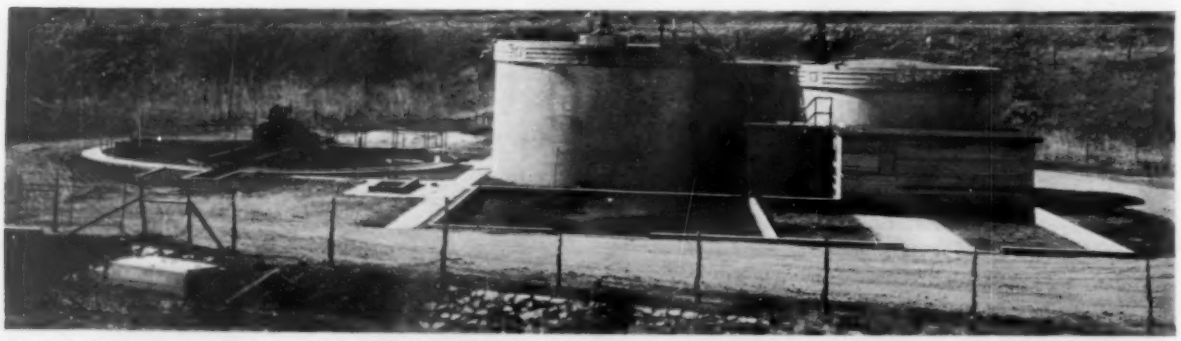
As constructed, the plant consists of a stationary bar screen, hand-cleaned; a 45-foot diameter Dorr Co. Clariflocculator; a 75 gpm Dorrco-Barnes sludge pump; a 25-foot diameter, 18-foot deep primary digester, a secondary digester of the same size but with floating cover; two 32-foot sludge drying beds, together with gas meters, flame traps, hot water heater utilizing digester gas, circulating hot water pump, waste gas burner and chlorinator.

The two outfall lines noted above converge at the entrance to the screen chamber. The screen chamber is 3 feet wide by 11 feet, 6 inches long by 2 feet, 9 inches water depth. This chamber acts, also, as a grit collecting chamber although not designed as such since it is the writer's contention that on flows as low as one or two second-feet, the word "grit-chamber" is a misnomer and those designed as such are merely wide places in the line.

From the outlet end and from near the bottom of the screen chamber a 12-inch pipe discharges into the center shaft of the clariflocculator. The entrance velocity into this pipe seems to be sufficient to keep the chamber cleared of the heavier solids which normally settle out. At least no abnormal accumulation of sewage solids has been noted nor has any septic action developed in this chamber. Inasmuch as the water level in the chamber is two feet above the center of the 12-inch outlet pipe, some of the lighter matter such as matches, and the well-known etcetera, float on the water surface. This has not created a removal problem since it soon sinks of its own accord and is carried into the settling tank. A by-pass also leads from the bottom of the screen chamber to a junction box on the overflow from the Clariflocculator.

Bar Screen

The bar screen is made from 2-inch x ¼-inch bars with 1½-inch clear openings and set at an angle of 60 degrees with the bottom of the chamber. This spacing has not been found to be too large since considerable fungus growths, in chunks sometimes as big as a hat, are continually sluffing off the old sewage pipes and these form, by far, the greatest quantity of material intercepted by the screen. The screen is hand-cleaned, the operator pushing the fungus growths through the screen, and raking rags and other undesirable trash onto a



No underdrains are required for the sludge drying beds in this arid operation. Notice the concrete driveway incorporated into the beds to make it easy for trucks to drive into the area and remove the sludge. The wood building in the foreground is a temporary coal shed furnishing heat for the digesters and will be removed as soon as gas production is sufficiently high to perform this task.

drain platform spanning the screen chamber and provided with a perforated floor drain. The drained screenings are then buried.

Sedimentation

The screened sewage enters the flocculation compartment of the Clariflocculator by gravity through a 12-inch cast-iron pipe. The sedimentation tank measures 45 feet, inside diameter, by 8 feet, sidewall depth. The flocculation compartment is suspended in the central portion of the tank and is 25 feet in diameter with 6-feet, 9-inch sidewalls.

The clarified overflow passes to the plant outlet line after flowing over a rectangular Francis weir with 2 foot crest length. A simple weir is used and in this location since it is easily checked, nearly fool-proof, and being on the clarified overflow it cannot be choked by floating solids. It gives continuously correct readings of the flow as the course of the sewage through the plant is entirely by gravity without pumping surges. The head on the weir is transmitted through an hydraulic pipe line to a float gage in the pump room where the head is recorded by a Bristol Recording gauge on a chart reading directly in mgd.

Sludge is withdrawn from beneath the mechanical rakes of the clarifier by means of a Dorrco-Barnes sludge pump with a capacity of 75 gpm and so placed as to provide a positive head of 13 inches on the center line of the suction pipe. It is likewise arranged to empty the scum sump—the change being quickly made by means of plug valves on the branch suction lines leading to the sludge and scum sumps, respectively.

Sludge Digestion

The two 25-foot diameter digester tanks are placed on 38-foot centers with the space between the tanks and six feet on each side of the common center line being walled in to form a valve room and control chamber. The pump room and laboratory are placed in front of the two tanks so that the tanks form the back wall. This arrangement conserves much of the tank radiation.

The primary digester is heated by a vertical hot water heat exchanger suspended from the fixed cover and extending to the bottom of the tank. Digester temperature in the primary tank is maintained at 92 degrees to 94 degrees F. To get effective heat transfer from the heat exchanger the mixer is operated for seven minutes out of each hour with the mixer motor controlled by an automatic timer installed by the plant superintendent. This mixing, together with efficient insulation, has permitted temperature control within a 4 deegree F limit over a period of nine months.

The secondary digester is heated with a single line of 2-inch pipe running around the inside of the tank just below the gas-holder stops in order to prevent freezing of the water seal.

The tanks are designed to operate, normally, in series with each other. Piping is so arranged, however, that either tank can be operated as a single stage digester. Digested sludge may be withdrawn from either tank through a short common line to the sludge beds. Three sampling cocks are provided on the secondary digester to check the depth of sludge in the tank. These are placed at 6, 9 and 12 feet, respectively from the base of the side wall and have proved their value in readily indicating to the operator the amount of sludge which is accumulating in the secondary tank during the winter months.

Digester Tank Insulation

A novel feature in the construction of the digester tank is the use of a course of pumice concrete around the outside of the digester tanks and over the top of the primary, in lieu of earth embankments, to provide insulation against heat losses in a country where the winter temperature normally goes down to about 20 degrees below zero and may reach 30 degrees below for short periods. The pumice was obtained from a nearby volcanic vent from whence the molten lava had been violently expelled by steam and gas explosions. The individual particles of pumice vary from 100 mesh to 1½-inch in size. Each particle, regardless of size, is a honeycomb of tiny air spaces caused by the internal expansion of the entrained gases before solidification. The material is hard enough to serve as a suitable aggregate, yet porous enough to make a valuable insulating membrane. The natural material weighs only 45 pounds per cubic foot. When crushed to pass a 4-mesh screen the crusher-run pumice contains enough fines to make a good concrete by the simple addition of Portland cement in the ratio of one part cement to 5 parts of pumice by weight, or one part cement to 10 or 12 parts pumice by volume. This produces a lightweight material of high insulating value.

After the tank walls had been poured of gravel concrete in the usual manner, the tie wires were left in and the outside form was re-erected 8 inches further out and the insulating course of pumice concrete was poured into the forms. The surface produced is of a coarse, velvety texture with a light pink color caused by red aggregate. This was given a brush coat of neat portland cement.

In constructing the walls and roof of the pump house, laboratory and control chamber, pumice concrete alone was used, 8 inches thick. The roof slab is flat and forms both roof and ceiling. The top 1½ inches was poured of 1:3 cement-sand mortar to insure water-tightness. No condensation whatsoever has been noted on walls or ceiling. These walls were likewise painted outside and in with a brush coat of neat cement.

Drying Beds

There are two sludge drying beds situated immediately behind the digesters, as shown in the rear view of the plant. The beds are 32 feet wide by 37 feet long. Low concrete walls 6 inches thick enclose the beds. Earth banks may have been sufficient but the concrete takes up less room and looks better. No underdrains are provided since drying in the arid West is almost wholly by evaporation. One inch of sand is kept on the bottom of the beds to permit ready lifting of the dried cake. A concrete driveway 9 feet wide and on a level with the surface of the bed is provided on the center line of each bed for loading dried sludge directly into farm trucks. The driveway slopes upward a height of 15 inches in six feet over the lip of the enclosing wall to the roadway grade. Loaded trucks have had no difficulty in pulling out of the beds. Sludge does not dry so well on the concrete driveway but drying has been aided by covering the concrete slab with about two inches of sand.

To avoid the necessity for two critical six-inch valves on the outer end of the sludge line discharging into the drying beds the sludge pipe was run up out of the ground and onto the partition wall between the two beds. A long, loose thread was cut on the end of the last pipe nipple and a malleable screwed elbow was screwed just snugly onto the pipe so that it could be turned by hand to discharge to either bed.

Gas Utilization and Heating

Gas production has been a constant .8 cubic feet per capita per day. What gas is needed is burned in a Basmor hot water boiler which heats the primary digester, the pump room, laboratory and the chlorinator room through hot water coils. Only enough heat is supplied to the secondary tank to keep the water seal on the floating cover from freezing. Hot water flowing to

the digester goes out at 130 degrees and returns at 110 degrees. This is pumped through the coils by means of a 1-inch centrifugal circulating pump and through a ¾-inch hot water meter. A three-way mixing valve controls the temperature of the water to the digester but it has been found necessary to throttle the water through the furnace to keep the water in the boiler above 140 degrees F. Mercurial thermometers are placed to indicate the temperature of the boiler, the mixed water to the digesters and the return water.

An American Gas meter, rated at 350 cubic feet per hour, measures the gas on the supply pipe to the heater and another performs the same task on the waste gas line. These meters were not originally provided with drain cocks, however, despite the use of a condensate trap the operator found it necessary to tap the meters for drainage. Flame arresters, thermal shut-off valves and pressure relief valves were furnished by the Vapor Recovery System Co. Lubricated plug valves used on gas lines, sludge lines and on raw sewage piping are easily opened by a one-quarter turn; they occupy less space than gate valves and the operator knows at a glance whether the valve is open or closed.

Chlorinator

The chlorinator is housed in a separate room abutting the rear of the secondary digester with the entrance opening to the outside in case of chlorine leakage. The room is heated from the hot water piping. The chlorination machine is a Wallace & Tiernan vacuum type, manual machine with a capacity of 75 pounds per day. Thus far the operator has not had to add chlorine for odor control.

The building provides a toilet and shower room for both the operator and visitors. The toilet, shower, roof drain, laboratory and sampling sinks all discharge into the scum sump.

Pipes Accessible

The compact layout of the plant has permitted the use of short connecting pipe lines with almost every pipe accessible from the pump room or control chamber for clearing possible stoppages. In like manner the compact grouping requires only short lengths of concrete sidewalk from the control room to all points to which an operator must go.

The hydraulics of the plant received special attention so that interruption of power, breakdown of equipment or clogging of pipes within the plant would be no cause for immediate alarm but would entail nothing more serious, in the absence of the operator, than a direct by-passing of the raw sewage to the outlet.

Sewage treatment in the intermountain west is relatively new and skilled operators, or even those vaguely familiar with the subject, are practically nonexistent. In general, city officials, especially the two-year-rotating type, have curious ideas concerning the ability of their special friends or appointees to operate, in a masterly fashion, a somewhat involved technical process which even skilled operators have not yet mastered.

Keen Interest

In this case, the Water Superintendent, aided by a cooperative city council, has taken a keen interest and personal pride in his plant and has taken upon himself, directly, its operation. He visits the plant twice a day for about one hour in the morning and one-half hour in the evening. Sludge is pumped twice daily, with the present loading, for periods of from 5 to 10 minutes each. The bar screen is raked, hot water heater and waste gas burner checked, pH recorded, gas meters read, chlorinator adjusted and mechanical equipment checked and oiled. Once a week, or as occasion requires, a handyman is brought down for special cleanup or other duties. This quite unorthodox modus operandi does not appear to have had any untoward effect on equipment or operation.

The project was commenced in the administration of Mayor T. R. Bowden who was succeeded in turn by J. Clifford Forsgren and E. A. Crockett. The plant was designed by the writer as consulting engineer. Construction was performed by the City of Preston under the direction of Mr. C. I. Goff, City Manager, with WPA labor. The project was under construction during the close of the WPA period and in the beginning of war activity, causing it to string along over a considerable period of time. But, despite all the just criticism which has been heaped upon the late lamented WPA, it must be said for the labor on this project that it compared favorably on a man-hour-dollar basis and quality of workmanship with normal, contract jobs.

Cost and Financing

The total cost of the treatment plant including cost of site and site preparation was $56,271.29 of which the Works Progress Administration provided $28,888.18 in labor with some materials. The City of Preston furnished $27,383.11. The installation of a total of 18,165 linear feet of 8, 10, 12 and 15-inch pipe on the two outfall lines and laterals cost $37,235.45 of which the Works Progress Administration provided $23,925.83 in labor and materials and the city put up $13,309.62. City funds were taken from current revenues by an enterprising City Manager who carefully budgeted every department to make available the necessary cash funds without recourse to bonding or borrowing.

County Officials Aid Paper Salvage Drive

Neptune, god of water, is receiving agent in the court house rotunda at Minneapolis, Minn., for U. S. Waste Paper Campaign. County officials cleaned house contributing obsolete records and the contents of files to the national paper salvage drive.

How Cities Buy Patented Articles

Modern warfare having caused the scientist to discover, and the industrialist to accept novel ideas, we have been promised that the post-war era will be a period of new and more efficient machines and processes, with different and better materials. When peace is achieved, these modern implements, almost invariably protected by patent grants or controlled by monopolies, will be ready for civilian use. Sound public administration will call for the use of these newer, more efficient, and, often, cheaper inventions. Will public agencies, acting in compliance with statutory procedures prescribed for them, be able to procure these new devices? That is the problem which will be discussed in this 2-part article. Part II will appear in the July 1944 issue of THE AMERICAN CITY. *This articles in somewhat longer form and bristling with many additional legal references, was published originally in the* Cornell Law Quarterly *for March 1944.*

By NELSON ROSENBAUM
Assistant Corporation Counsel
City of New York

This article in somewhat longer form and bristling with legal references, was published originally in *Cornell Law Quarterly* for March 1944.

MOST public agencies in this country must award contracts in excess of $500 by competitive bidding, *i.e.*, to the lowest, or lowest *responsible* bidder.[1] Statutes requiring competitive bidding have been adopted with a view towards insuring economy in the public administration so that "the public may receive the benefit of the greatest possible value for the least expenditure," with the view of promoting honesty, fidelity and good morality in the administration of contract awards and, lastly, to eliminate favoritism.

The procurement of a patented article or process on the basis of competitive bidding has been under judicial consideration for three quarters of a century. The problem arises because competitive bidding requires bidders to submit proposals on equal terms, usually in response to definite specifications, but this equality obviously cannot exist when the article or process specified is patented, since the patentee has "an exclusive right to make, use and vend the particular device described and claimed in the patent. Of course, were there no legal compulsion for competitive bidding, patented articles could be purchased by public officials without restraint and by private negotiation. But because generally there is such legal compulsion, public officials in some jurisdictions have been unable to obtain a valuable specified article because, being patented, it did not lend itself to competitive bidding. Public officials in other jurisdictions have gotten over this hump by saying that statutes requiring competitive bidding have no application to patented articles.[2] Jurisdictions adhering to the former course of excluding the acquisition of patented articles are said to follow the "Wisconsin" rule, while jurisdictions permitting the acquisition of patented articles come under the "Michigan" rule.

Neither of these rules alone could be expected to prove satisfactory. The former, or "exclusion" rule, if followed strictly, would impair the efficacy of the public service; while the latter, or "permissive" rule, if similarly applied, might lead to abuses and loss to the public treasury. For example, in a case where a patented article is named in a contract together with unpatented materials on which competition could readily be procured, the supplier of the patented article would have an opportunity to charge exorbitant prices upon the unpatented items.[3] Some jurisdictions which recognized the permissive rule, becoming alarmed over the possible abuses of this rule by public officials,[4] enacted statutes securing competition as the sole criterion for awarding contracts.[5] Subsequent experiences in other localities showed that these legislative fears were not altogether unwarranted.[6] On the other hand, where the exclusion rule was sanctioned, the legislature came to the aid of public corporations, making available to them newly invented patented devices by authorizing their purchase under conditions which maintained some form of competition. [7]

In order to secure as much competition as might be available, even though patented articles were specified, two additional methods commonly known as the "equal opportunity" and "alternate" rules, were adopted in some states. Furthermore, the so-called "repair" rule was introduced to solve the problem of whether parts essential for replacements of patented articles acquired by public agencies had to be purchased by competitive bidding.

Much of the remainder of this paper will be taken up with a discussion of these various rules.

[1] See THE AMERICAN CITY for February 1943, page 37.

[2] Hobart v. City of Detroit, 17 Mich. 246, 97 Am. Dec. 185 (1868); Hoffman v. City of Muscatine, 212 Iowa 867, 232 N. W. 430, 77 A. L. R. 680 (1930); Smith v. City of Seattle, 192 Wash. 64, 72 P. (2d) 588 (1937).

[3] In *Matter of Eager*, 46 N. Y. 100, 106 (1871) the court said: "Even if we should hold that patented articles may be contracted for by the city, notwithstanding the impossibility of competition, we ought to stop there, and not go to the length of sanctioning a practice, whereby competition may be prevented, by unnecessarily coupling a work not patented, with one which is patented, and advertising for a proposal for the whole."

[4] In *Attorney General* v. *Detroit*, 26 Mich. 263 (1872) it was said (p. 270): "If they (public officials) invite proposals for a particular thing or process, they necessarily in so doing exclude everything else which might be substituted for the thing called for; and there is no clearer field for corruption and favoritism than in shaping proposals, if in fact the city is in corrupt hands."

[5] In 1872, in *Matter of Dugro*, 50 N. Y. 513, the permissive rule was adopted. The next year the legislature adopted a statutory method for procuring patented articles for the City of New York. The statute as enacted (L. 1873, Ch. 335, § 115, as *amended*, L. 1873, Ch. 758, § 22) provided: "***, except for repairs no patented pavement shall be laid, and no patented article shall be advertised for, contracted for or purchased. Except under such circumstances that there can be a fair and reasonable opportunity for competition, the conditions to secure which shall be prescribed by the board of estimate and apportionment." The present charter of the City of New York still contains the foregoing provisions, but there has been added this additional provision: "unless the board of estimate [formerly the board of estimate and apportionment] by a three-fourths vote shall find that it is to the interest of the city in a particular case to purchase and shall authorize the purchase of a patented article as to which competition cannot be secured." (§ 348 New York city charter [1938]).

[6] In 1920 there developed in Essex County, New Jersey, a so-called "patented paving scandal" owing to the fact that the paving of certain roads was limited to two patented pavements. As a result, there was enacted in 1923 an act known as the "Open Specification for Public Paving" (Ch. 188, Pub. L. 1925, N. J. STAT. ANN. (1940) tit. 27, ch. 2, § 4) which provides: "If a patented, proprietary pavement or paving material, or ingredients used in paving, is included in the specifications, the body having charge of the work shall not only specify such type of construction, but shall also place in the specifications one or more equivalent types of construction upon which no patent exists, or upon which there is no proprietary right or condition, as an alternate type, and bids shall be asked for on the various types so specified. The award shall be made to the lowest responsible bidder on the types of construction so placed in competition." The history of the factual background for this law will be found in REED, TWENTY YEARS OF GOVERNMENT IN ESSEX COUNTY, NEW JERSEY (1938) ch. V.

[7] In Wisconsin, after the adoption of the rule in *Dean* v. *Charlton*, 23 Wis. 590, 99 Am. Dec. 205 (1868), the legislature provided in the city charter of Milwaukee (1914, c. 5, § 23) that the city could purchase the right to use any patented article at a royalty for improvement payable out of assessment funds.

The Wisconsin Rule

The Wisconsin rule, prohibiting the specification of a patented article in a public contract required to be awarded on competitive bids, had its origin in *Dean v. Charlton*. In this case the improvement called for the grading of a street and the laying of a patented pavement. The cost of this improvement was to be paid by assessments levied upon the abutting property. One firm had the exclusive right to lay the specified patented pavement. There was no general power in the municipality to do this work at the expense of the abutting property owners. The power to lay pavements and assess their cost against the abutting property arose from a special statute which required the contract for such work to be awarded to the lowest responsible bidder. It was held that the naming of a patented article thwarted the very basis upon which the power to pave the street was given, the securing of competition for the work, and such competition "was not preserved in the letting of this contract; and it was, therefore, beyond the scope and in violation of the spirit of the charter." Other courts which follow the exclusion rule stress the necessity of having "real and practical competition" for the work, and argue that "no one can compete on equal terms, with a man who controls the sale of the thing needed," and that under these conditions "there can hardly be a lowest bidder."

Under the Wisconsin rule it is illegal to contract for the delivery of an unpatented article under a coined or trade name. It is also improper to let a contract for an article which is in fact patented, although the contract deceptively does not designate it as such; and in such a case the court will receive evidence that the article mentioned is patented. With this rule the inclusion of a patented article makes the contract void, so that payment for the performance of even the unpatented portion cannot be obtained, nevertheless, a contractor may recover his contract price if by his own voluntary act, and not as a matter of contractual compulsion, he performs the contract by the use of a patented device.

The Michigan Rule

The Michigan, or liberal rule, allowing the designation of a patented article in a public contract to be awarded on competitive bids, was enunciated in *Hobart v. City of Detroit* upon facts similiar to *Dean v. Charlton, supra*. The argument raised by counsel that the specification of a patented pavement was illegal as preventing the competition intended by the statute, was rejected on the ground that such a holding would deprive the public agencies of the use of newer, more useful, and in some instances cheaper inventions. The court dispelled the fear that a public agency was helpless against paying exorbitant prices for a patented contrivance by pointing out that the awarding officer could reject an unreasonable bid, and concluded that the requirement of competitive bidding was intended to secure competition only when practicable.

Competitive Bids

The claim that calling for a patented article does not "admit of competitive bids," where contracts are required to be let to the lowest bidder, has been rejected by other courts upon the reasoning that the selection of the materials to be used in constructing a public improvement rests in the discretion of the designated public officer or body, whose discretion should not be curtailed or limited by a general directory provision providing for competitive bids. It has also been held that statutes such as those in question merely prescribing forms of procedure for the activities of public bodies, are obligatory only to the extent to which they are applicable by their terms; that the legislature cannot be presumed to have intended that a power shall be exercised or work contracted for only if admitting of competitive bidding. Therefore, if an article specified does not lend itself to competition, nevertheless, a public officer has power to specify it, and the article may be considered as an exception to the statutory provision requiring the receipt of competitive bids.

Other courts adopting the permissive rule do so on the basis of public necessity and welfare, pointing out that it was "never intended that the city authorities should be unable to make a contract, however necessary to the public welfare such contract might be, if the article desired, or the manner of performance of the contract, required the use of a patented article."

Where a statute authorizes the use of a particular patented article, provided bids therefor are advertised for, and a contract is awarded in compliance with such provisions, the contract is valid, even though there be but one bidder, the patentee. For the legislature is presumed to have known, at the time it enacted the statute, that the patented article was such that it might not be the subject of competition. The provision for advertising for bids to furnish the patented article is not a restriction upon the contracting officer's power to secure the patented implement, but is "merely a regulation of the mode of discharging" the duty imposed upon him "in obtaining proposals" for such article.

The right to specify a patented article does not authorize a contracting officer to include it in one contract with work which is unpatented and capable of separate performance and for which competition can be secured. A contract so awarded is void. By combining these two items in one contract, competition is excluded on that for which competition may be obtained. The proper practice to follow in such a case is to receive separate proposals for the work capable of being performed separately.

Often the charge is made that the specified patented device possesses no superiority or other advantage over another unpatented one. The courts, however, are loath to set aside the judgment of public officers acting in good faith. To cast aside such selection there must be proof of bad faith, not evidence of bad judgment, for otherwise the courts would be substituting their judgment for that of the public officials charged with the duty of making the necessary selections, and deprive public agencies of the opportunity to secure those things best suited for their purposes, and often, at lower prices.

Advertising for Bids

In applying the permissive rule in practice, the question of advertising for bids arises. Some decisions hold that such advertising is not required, because there is no opportunity for competition and negotiation of the contract is more appropriate. A similar conclusion was reached where the patented article (parking meters) had not been sufficiently developed to permit the drawing of a definite competitive specification. A legal requirement for obtaining a minimum of two bids as a condition precedent to an award of a public contract does not apply where the permissive rule is followed.

On the other hand, it has been decided that a contract for a patented device is subject to the statute requiring advertising for bids and the failure to do so voids the contract awarded. One view taken of this question is that to neglect to advertise for bids would permit the secret negotiation of public contracts without the beneficial advantage of publicity, and that even pat-

(*Continued on page 141*)

Part II of this important article will appear in the July 1944 issue of THE AMERICAN CITY. ***It will discuss monopolized articles and the rules whereby competition can be secured even when patented articles are specified.***

Minimum Fire Alarm for a Small Town

Now's the Time to Plan for It

PRIOR to 1940, Island Park, N. Y., like thousands of smaller communities, had no fire-alarm system. Island Park, on Long Island, five minutes by train from the summer resort Long Beach, has 1,600 people in 800 houses, and a school. But the village has a capable fire commissioner and a mayor who backed him up when he asked for a Gamewell Vitaguard automatic fire-alarm system. Philip Nitlow, Fire Chief from 1926 to 1930 and Fire Commissioner continuously since 1930, says that most small towns he knows get in a rut and stay there with respect to the fire department. He was convinced that a box fire-alarm system would step up the efficiency of the volunteer department.

After some natural arguments, the Village Board bought a 40-box system. During the first full year the system consisted of the headquarters control unit, compressor for the air horn, the horn and two fire-alarm boxes. A year later, 17 more boxes were purchased, and a local county fire district, which pays the village $1,200 a year for fire protection, bought 9 and tied them into the Island Park circuit. There is now a total of 32 boxes.

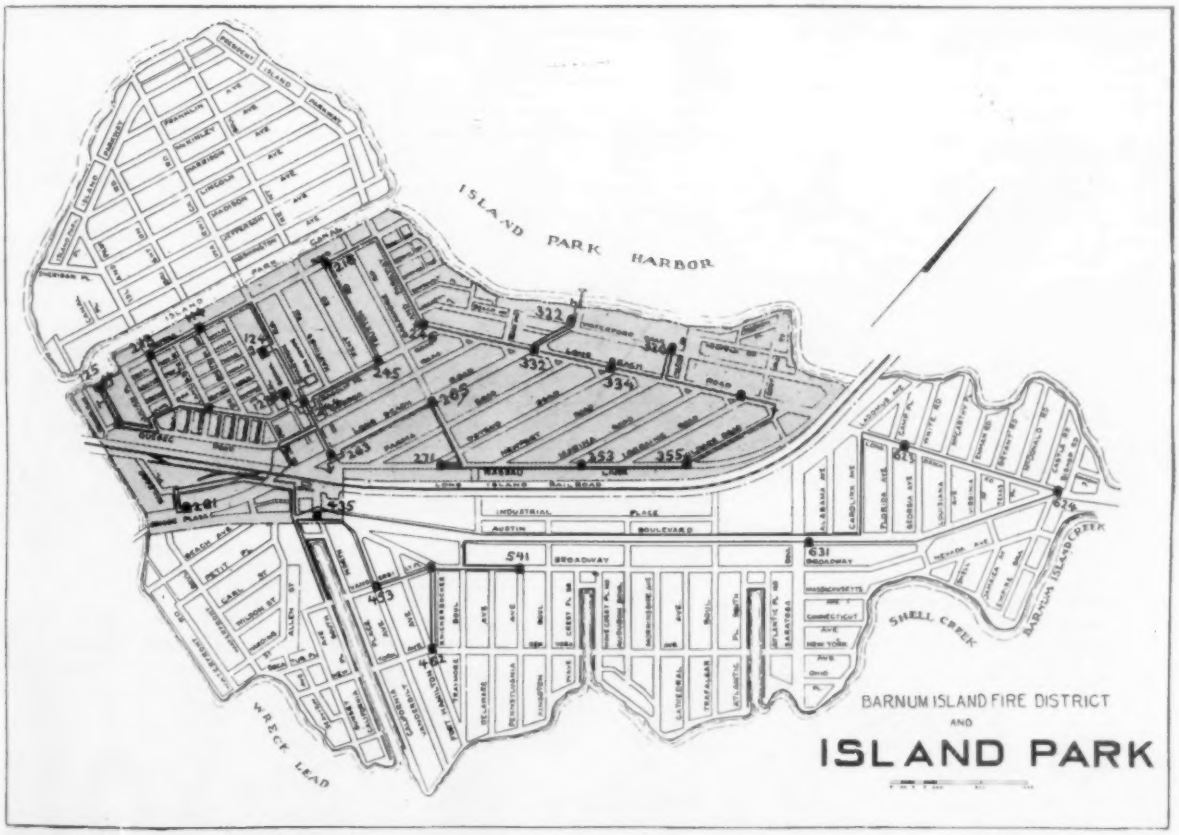
The boxes are small and simple, but of the modern grounded type which operates even when a circuit wire is severed or a short circuit occurs. When the handle is pulled down, the proper code for that box is repeated four times by the horn on the roof of the fire house. These boxes are fully automatic, foolproof, says Mr. Nitlow, and constitute one complete circuit. A short circuit lights a red lamp on the control unit, rings a bell in the fire house and sounds one blast on the horn. This unit is connected to the electric line, but should power be interrupted goes over automatically onto a battery.

Telephone Alarm

The fire house is normally closed, and locked day and night. Vitaguard works alone without any attendance. There is, however, a telephone for fire alarms. Should it ring while someone is in the fire house, the firemen can sound the code of the proper box by putting a toothed wheel, a duplicate of the code wheel in that box, in the control unit. Should there be no one in the fire house to answer the telephone, which is usually the case, a similar telephone rings in the nearby Petroleum Heat and Power Company where there is a watchman 24 hours a day. The watchman operates a telegraph key which sounds the horn on the fire house. This horn, which also can be blown by a hand cord, is jacketed by an asbestos-lined box containing several electric lamps to prevent freezing. Air is furnished by a Westinghouse Air Brake compressor which starts operation automatically when pressure falls to 130 pounds and cuts out at 150 pounds. An outlet at the bottom of the compressor is used for putting the 100 pounds pressure in the apparatus tires.

Fire Apparatus

The fire house contains three pieces of American-LaFrance fire apparatus. The oldest, 1928, is a 600-gallon pumper carrying 800 feet of hose and a Foamite 35-gallon wet tank. In 1931, a quadruple was installed. It has an 80-gallon booster tank and a



Island Park, N. Y., with 800 houses has a model automatic fire alarm system of 66 boxes whose distribution is indicated on this map.

600-gpm pump. It carries a portable Foamite generator. In the same year, a hose car was installed. Besides tending the pumping engines with its 1,200 feet of hose, it serves as an emergency truck. Equipped with a deck pipe and a Morse deluge nozzle, it also carries an H-H inhalator, heating pads and grappling hooks. Batteries on the three trucks are kept charged by a B & R charges sold by John Bean Manufacturing Co. In addition to the air horn, and for air-raid signal, there is a 2-horsepower Sterling siren.

Mr. Nitlow says that what particularly impressed the Village Board, when the fire-alarm proposal was investigated, was the moderate cost of this system which fits the village to a T. What now impresses the entire community, in addition to the almost negligible operating cost, is the speed with which it gets men and apparatus to fires.

A Tape That Sparked a Personnel Card System

By HERBERT B. MYRON
Executive Director
Onondaga County Civil Service Commission
Syracuse, N. Y.

Leave this space blank — Date Received — Fee Received — $ — By

ONONDAGA COUNTY CIVIL SERVICE COMMISSION
APPLICATION FOR EMPLOYMENT

POSITION _____
See announcement for exact title
Mail or deliver to Onondaga County Civil Service Commission, 109 Court House, Syracuse, N. Y.

Leave this space blank — Number — APPLICATION — Accepted by — Rejected by

This application is part of your examination. Answer all questions fully and carefully in ink or on the typewriter. You may attach additional sheets if necessary in order to give complete and detailed information.

1. NAME (Please print) Last Middle First	2. ADDRESS Number Street or Avenue	CITY, TOWN or VILLAGE Indicate which	3. Phone No.	
INDICATE BY AN "X" WHICH APPLIES TO YOU	4. SEX ☐ MALE ☐ FEMALE	5. MARITAL STATUS ☐ SINGLE ☐ MARRIED ☐ WIDOWED ☐ DIVORCED	6. HEIGHT Feet Inches	7. WEIGHT Pounds
8. HOW LONG HAVE YOU CONTINUOUSLY BEEN A RESIDENT OF	NEW YORK STATE Years Months	ONONDAGA COUNTY Years Months	CITY OF SYRACUSE Years Months	YOUR TOWN Years Months	YOUR VILLAGE Years Months
9. DATE OF BIRTH Month Day Year	10. COUNTRY OF BIRTH	11. ARE YOU A CITIZEN OF THE U.S.A.? ☐ Yes ☐ No	IF "YES" INDICATE HOW OBTAINED ☐ BIRTH ☐ MARRIAGE ☐ NATURALIZATION	
12. DATE OF MARRIAGE Month Day Year	13. NATURALIZATION CERTIFICATE NO.	NAME OF HOLDER	HOLDER IS ☐ FATHER ☐ HUSBAND ☐ MOTHER	
14. DO YOU CLAIM ANY PREFERENCE AS A DISABLED WAR VETERAN? ☐ YES ☐ NO	IF "YES" STATE NATURE OF DISABILITY			
15. HAVE YOU ANY MINOR OR MAJOR PHYSICAL DEFECTS OR AILMENTS? ☐ YES ☐ NO	IF "YES" EXPLAIN FULLY			
16. HAVE YOU EVER BEEN INDICTED FOR, OR CONVICTED OF, ANY VIOLATION OF LAW OTHER THAN MINOR TRAFFIC VIOLATIONS? ☐ YES ☐ NO	IF "YES" GIVE DETAILS			
17. HAVE YOU EVER BEEN DISMISSED FROM PUBLIC SERVICE? ☐ YES ☐ NO	IF "YES" GIVE DETAILS			
18. DO YOU HOLD THE NECESSARY LICENSES OR CERTIFICATES FOR THIS POSITION? ☐ YES ☐ NO	TITLE OF LICENSE	ISSUED BY	EXPIRATION DATE	
19. HAVE YOU EVER APPLIED FOR ANY OTHER POSITION IN THE SERVICE OF ONONDAGA COUNTY OR CITY OF SYRACUSE? ☐ YES ☐ NO	TITLE OF POSITIONS	DATES		

20. HAVE YOU ANY OBJECTION TO THE COMMISSION MAKING INQUIRY OF YOUR PRESENT EMPLOYER REGARDING YOUR CHARACTER AND QUALIFICATIONS? ☐ YES ☐ NO

21. STATE OF NEW YORK } ss.
County of Onondaga }

AFFIDAVIT
(Required on all applications)

_____ being duly sworn, deposes and says that he is the applicant described in this application (including statements attached thereto); that he has read or has had read to him the contents thereof and that to the best of his knowledge and belief, all statements contained therein are true.
Sworn to before me this
_____ day of _____ 194__

_____ Signature of officer
_____ Title of officer
(Notary Public, Commissioner of Deeds, Justice of Peace or other person authorized to take affidavits)

_____ Signature of applicant

Note. If any material change or correction is made in this application, such change or correction must be under oath.

FORM 1

APPLICATION FORM FOR EMPLOYMENT BY ONONDAGA MUNICIPALITIES

Employees of the County of Onondaga, N. Y. and of the 15 villages, 19 towns, and one city in that country, are obtained and examined by the County Civil Service Commission and the payrolls of all these political subdivisions are certified by the county as stated in this article. The front of the application form is shown above. On the reverse side the applicant gives educational and former employment history. The Commission prides itself on its forms which include three other personnel forms by which the municipalities report to the County Civil Service Commission: (1) Nomination for non-competitive examination, (2) report of personnel changes, (3) report of appointments.

ADEQUATE personnel records are important not only to a governmental unit and government employment generally but to each and every employee as well. To be effective, personnel records must be concise, compact, easy to keep up to date, and thus an invitation to use.

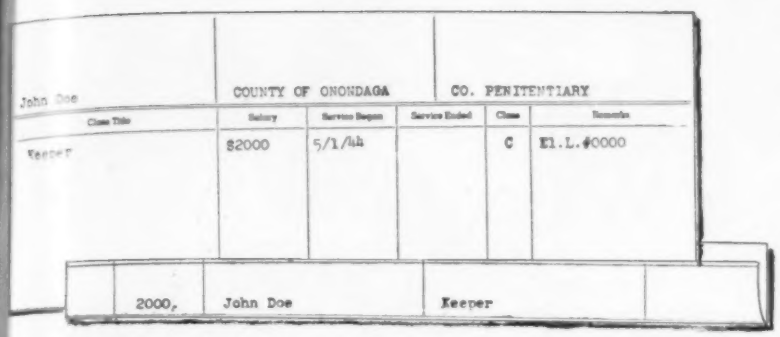
On July 1, 1942, the Onondaga County Board of Supervisors established their own county Civil Service Commission to service the County of Onondaga, all villages, towns and other political units therein. The Common Council of the city of Syracuse elected to abolish the city Civil Service Commission and be serviced by the County Commission which started functioning July 1, 1943.

To handle this personnel work, it was necessary for the county to take over the Syracuse city records and canvass the local units of government for their personnel lists. County personnel records, formerly handled by the state, were turned over to the county Civil Service Commission.

A record system had to be devised which would make it possible for a small office force to maintain and use with greatest possible ease and speed the 7,000 personnel records of the County of Onondaga, 15 villages, 19 towns and the city of Syracuse. In cooperation with Remington Rand Inc., a visible Kardex Card System was established.

The roster card shown here carries only the information necessary for maintaining the service record of an employee. The card carries the complete history of the employee showing date of original entrance to the service, promotion, leaves of absence, resignation, reinstatement, transfer, or any separation from the service. All cards are filed by political division and are arranged in payroll order.

One of the most important functions of the Commission is to certify payrolls for the payment of services of employees by the proper auditing officer.



Kardex personnel cards like the ones above are used in certifying the payrolls of Onondaga County's 35 municipalities. The "tape" described in the article can be removed in case of a change in position and replaced by a new tape giving the new position.

To make possible speedy and accurate checking of payrolls, at the bottom of each roster card there is a removable tape or title insert which contains the name, title, and salary of each employee. Any card requiring special attention—such as temporary appointments—is starred on the tape at the left hand side and the reason is described at the extreme right.

In case of a change in title or salary, a new tape is prepared. These tapes are always in full view and must correspond with the payroll. They make possible the checking of the payroll by an office employee who is not necessarily skilled in personnel work. They also eliminate the handling of all roster cards in connection with payroll certification.

The Commission feels that this type of system is of great value in carrying out efficiently the Civil Service Law because it prevents cards from being lost or mislaid and is simple to maintain and operate. The records themselves are always available; each one is in a permanent pocket and easily seen; and it is not necessary to "paw over" twenty to a hundred other cards to get at the one wanted. The tape is the key to the system. All the tapes are at all times clearly visible and give an instant picture not only of each employee but of all the persons in each department of each political unit.

Using the Kardex system enables the Commission to certify to the County Auditor semi-monthly payrolls of the County service of 1,338 employees in 32 departments in 90 minutes, proving the practicability of the system.

Modernizing Local Governments

Some Practical Problems Involved

IN their important new book, "State and Local Finance in the National Economy,"* Alvin H. Hansen and Harvey S. Perloff give special emphasis to the need for modernizing local governments. "Without this," the authors point out, "improved service standards, equity in tax burdens, and fiscal soundness cannot be achieved. In many instances local governments comprise ineffective and uneconomical service areas, and frequently lack sufficient resources to command competent administration. Service standards thus suffer and local self-government as well."

Discussing the practical problems involved in modernizing local governments, Drs. Hansen and Perloff say, in part (in Chapter V):

The forces which stand in the way of the rationalization of local units of government are formidable. They include (a) local loyalties, which induce people to resist the dissolution of local governmental units regarded as their own; (b) tradition, or the tendency to think of arrangements made in the past as having an inherent rightness and permanence; (c) desire of local office holders to hold onto their jobs; (d) resistance of individuals and businesses to reorganization which might increase their tax bill; (e) resistance of businesses that are getting special favors from existing local governments; (f) resistance of local units that stand to lose some of their taxable resources; (g) urban-rural antagonisms especially where it is felt that a change might involve additional burdens or a loss of power. The list might be expanded, but the obstacles already noted will suffice to indicate the many-sided difficulties involved in local reorganization. . . .

Some thoughtful students of local government, considering the lack of progress in reorganization of local units, have urged the complete centralization of the important services in the state governments. And, as a matter of fact, the reallocation of functions from local to state governments has gained momentum within the last generation. It is entirely possible that certain of the services now administered chiefly by localities should logically be state functions. However, even if a number of services were reallocated, the desirability of rationalizing local units would still remain.

Expert Commission Recommended

The modernization of local government should be undertaken as an organic whole. Perhaps the most effective procedure is for each state to establish an expert commission to draw up alternative plans for the total reorganization of local government within the state, to hold public hearings for the expression of all points of view, to provide a constitutional convention for the adoption of a plan for reorganization, and to submit the plan to the voters of the state. In this way, a balanced plan could be evolved, the whole problem would receive the attention and interest it deserves, and democracy would be given a fair chance to function.

This alone, however, would not be sufficient. The gains of reorganization should be made concrete and understandable to all citizens. Thus, for example, the presentation of plans for the formation of metropolitan governments should be accompanied by programs for city rebuilding which would capture the imagination of all the metropolitan residents—programs of rebuilding which would provide for rapid transit, off-street parking facilities, beautiful parks and recreation centers, and balanced and attractive neighborhoods throughout the entire metropolitan area. The advantages of unified planning and development and the coordinated provision of services must be given concrete form.

Similarly, the plans for the dissolution of local governments in sparsely populated areas should be accompanied by definite progams of land utilization, soil conservation, reforestation, and rehabilitation, so that the advantages of direct state responsibility for "unorganized territories" could be seen and understood.

Factors Blocking Progress

The success of democratic government depends in very large part on its capacity to make adaptation to change. Progress has, however, been blocked by two factors. First, changes have been attempted piecemeal, with the result that small but active and vocal minorities, with clear-cut selfish interests to uphold, have been able to concentrate their energies and outshout the diffused voices of reform. Second, the positive advantages of local government modernization have not been brought home in a concrete manner to the mass of citizens.

"Adaptation" does not mean, when the direction is manifest, that we must proceed piecemeal and by trial and error, as if we were feeling our way through uncharted territory. Rather, it implies the need for positive action once the goal has been clarified. Thus, in the modernization of local government, boldness of action (as signified by a comprehensive reorganization through a constitutional convention) is essential. It is, however, important that machinery be provided for continued adaptation to changed conditions through democratic means, so that the elasticity and vitality of democratic government may be preserved.

* See page 143 of this issue.

Water Leak and Pipe Finder Aids Water Conservation

Two Mechanical Detectives Locate Pipe Leaks and the Savings Effected Make Their Use Economically Sound

THE war has brought sharply to the attention of every waterworks man the need for conserving water. Prior to the war the need was simply a local one dictated by such conditions as drought, inadequate supplies or unpredictable demands. Today the interest in conservation is national in scope. Even where supplies of water are ample the use of vital commodities such as equipment, power, and chemicals must be curtailed. This situation naturally creates interest in possible methods of reducing water losses.

Experience Helpful

The experiences of the Philadelphia Suburban Water Company of Bryn Mawr, Pa., a privately owned utility, over a period of several years, should prove helpful. Being keenly aware of the dollars-and-cents value of water lost through leaks in pipes, and manhours wasted, hopefully hunting down some hard-to-locate main, they adopted for use the electronic pipe finding and leak detecting apparatus known as the M-Scope.

The Philadelphia Suburban Water Company serves approximately 400,000 people in an area of 300 square miles adjacent to Philadelphia. It has a distribution system consisting of 1,200 miles of pipe with 94,000 connected services. Under the direction of George Dann, Superintendent, the Engineering Department carries out its maintenance program with the aid of the pipe finder and leak detector together with a rigidly accurate set of maps.

Two Units

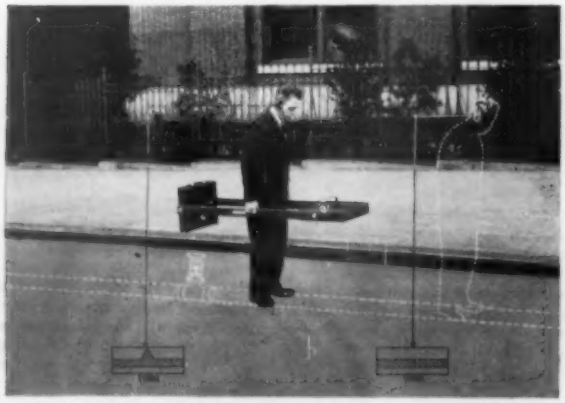
The M-Scope Pipe and Cable Finder was a product of the same research that developed the radio beam for guiding airplanes. This device is made up of two specially designed units, a transmitter and a receiver. The transmitter radiates electric waves of carefully selected frequency. There are several different ways of operating this locator according to the specific type of work to be accomplished.

If an underground structure is to be traced along its length, the transmitter is placed on or over some known starting point, such as a valve box, curb box, service connection, or fire hydrant. With the transmitter at this position, the operator then takes the receiver with earphone attached and explores an arc at a distance of at least thirty feet from the transmitter. If there is a pipe line between the transmitter and receiver at some point on this arc, the operator picks up a definite signal which he follows around the arc to a point of maximum signal. The underground metallic structure then lies underneath a line drawn between the transmitter and the receiver. After determining the exact line the operator merely keeps on the point of maximum signal, which places him at a point directly over the structure being followed.

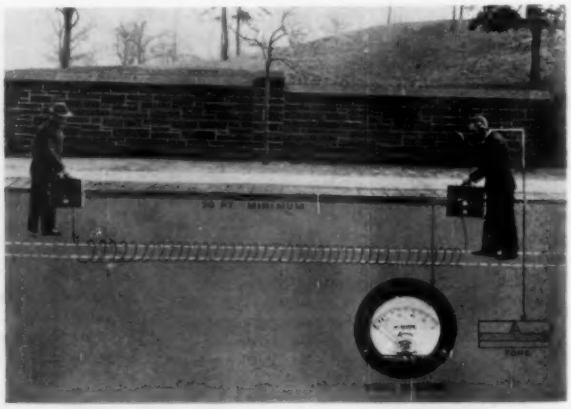
There are other cases that would dictate the determining of the actual presence of some metallic object underneath the surface of the ground. In this case the transmitter and the receiver are attached together at right angles to each other by means of two handles, the operator working between these handles. The operator then walks over the suspected area, and on approaching the object—whether it be a pipe line, or a piece of metal such as a curb box or valve box—he receives a peak signal which he quickly loses on passing over the object. Marking this spot and passing back over the same location from the opposite direction, he secures again a point of peak signal. The object in question lies halfway between the points of peak signal.

Crystal-Type Unit

The M-Scope Leak Detector, unlike the Pipe Finder, employs a very sensitive crystal type pickup unit which shows the intensity of vibration by the sound in the head set, along with the



One man can locate a pipe line with the pipe finder as assembled here.



Two men use pipe detecting equipment to locate pipe. Note visual indicator.

The leak detector can be used to measure flow in pipes in practically any location. Here the operator has connected it to a pipe in a basement.

By hooking the apparatus to water hydrants, the operator can easily detect a leak within the range of a block of its location.

number of amplitudes on the visual indicator. The unit is equipped with a selector which filters out many sounds. If it were not for this selector the unit would amplify the sound of children's footsteps to a sound like an elephant's.

Leak-Detection Schedule

One-man surveys are carried out on a well established leak detection schedule with the aid of the leak detector. The operator closes the shut-off valve, attaches the microphone to the valve and records the number of amplitudes indicated. By comparing the amplitudes recorded at various points along the pipe, the probable location of a leak may be determined. The exact location may be found; first, by finding the exact location of the pipe with the Pipe and Cable Finder; second, by moving the microphone over the ground on the exact line of the pipe. The maximum indications will be received directly over the point where the leak occurs.

Experience of the company crews has shown that even where a leak is indicated by the appearance of the ground it is best to use the leak detector to determine the exact location. In practice water-works men have found appearances to be deceptive since a large leak will often manifest itself on the surface many feet from the origin, having travelled along the pipe, down a grade, or in any other line of least resistance.

The water company's use of leak detection equipment on the distribution system is much like the routine painting of an overhead water tower, or the periodic resurfacing of asphalt streets—it is designed to prevent both small and large leaks and therefore to overcome great losses of water.

With practice the operator becomes adept at interpreting the sounds of leaks under various conditions. For example—a leak of needle point size may travel only a few feet along the pipe, and a leak throwing off vibrations sufficient to carry two hundred feet along the pipe line will come two feet through the ground. A leak of sufficient intensity to carry five hundred feet along the pipe line will come up five feet through the ground. All these assumptions are contingent on the type of pipe and the type of soil or paving. To illustrate this a very small leak on copper pipe would give an extremely loud sound; whereas a much larger leak on a piece of rust coated galvanized pipe might give a sound of much less intensity.

Daytime Survey

Although unusual noises such as heavy traffic and heavy flow through pipes often hamper leak surveys, the Philadelphia Suburban Water Company, in actual practice, have been able to conduct their surveys during the daytime. The operator must be also careful when measuring pipes of large diameter because of the deadening action of the thicker walls. However, the Philadelphia Suburban Water Company successfully measures leaks in pipes up to as as large as 30 inches in diameter.

With a sounding plate attached to the apparatus, the exact location of a leak can be determined.

Use-Economical

The results of four years use of this Pipe and Cable Finder and Leak Detector by this company show that they serve admirably to supplement labor-reduced crews and cut down on the amount wasted. While it is difficult to determine the exact amount of savings effected, their experience shows that the use of these instruments is ecomically sound. Neither instrument requires the services of men any more skilled than those normally found in average water departments. The observations are not difficult to record nor the results hard to interpret. With a small amount of practice the operator becomes adept not only at reading and recording but at interpreting his findings.

Annual Electric Dividend

FOLLOWING its annual custom the municipally-owned electric department at Fergus Falls, Minn., is again returning to its customers a dividend amounting to 10 percent of the previous 12 months billing.

The refund may be applied either on a current electric bill or will be paid in cash to the customer.

Fergus Falls operates a distribution system only, buying the electricity wholesale. Rates for electricity are as follows:

First 50 kwhr	.....$.03	per kwhr
Next 50 "	..... .025	" "
Next 100 "	..... .02	" "

Dow I. Sears is Superintendent.

Sixteen Steps Towards Sound Post-War Municipal Finance

By CARL H. CHATTERS
Executive Director
Municipal Finance Officers Association

For its annual conference last month the American Society of Planning Officals asked the Executive Director of the Municipal Finance Officers Association to discuss the prospects for municipal revenues and expenditures in the post-war years, especially as related to financial planning. Before offering the sixteen specific suggestions here set forth, Mr. Chatters took a brief look at the property tax and some possible sources of municipal revenues:

1.

MUNICIPALITIES should continue to reduce their debts and continue toward a pay-as-you-go basis until their post-war needs are so great that borrowing is the only alternative. A very large number of cities and counties have made large reductions in debt. Others are debt-free or substantially so, including Lansing and Kalamazoo, Mich.; Milwaukee, West Allis and South Milwaukee, Wis.

2.

Municipalities should continue to eliminate short-term borrowing and should enter the post-war period with balanced budgets and no carry-over short-term loans. Short-term municipal borrowings now are comparatively small and promptly retired.

3.

Municipalities should continue to set up reserves for post-war use and these reserves should be protected and held until their use will make the greatest contribution to recovery. More than 20 states have authorized such reserves by special statutes.

4.

Municipalities must control the development and use of land in order to control both operating costs and capital costs. Suburban over-developments contribute to high operating costs, large municipal debts and haphazard housing.

5.

While municipal public works will provide employment for only 3 percent to 8 percent of the numbers who may need jobs in the post-war period, still these public works if carried on at the proper time can be a stabilizing element. The timing and the extent of local public works will determine to some degree the amount of federal and state aid needed by municipalities.

6.

Unless public works are built around a master plan, the construction of new public works may set back permanent redevelopment for a generation or more. Without some master plan or controlled development, new expenditures on a large scale may aggravate the rundown condition of the central areas in large cities.

7.

If there are any federal or state grants for public works or employment relief, then we come to the inescapable conclusion, based on the experience of depression years, that municipalities which are prepared with good plans and some money of their own, will obtain something of permanent value, while the others will do "leaf raking" or nothing. Chicago remade its lake front with WPA help while many cities have no permanent values to show for large expenditures.

The real estate property tax has continued to increase in amount, but contrarywise has brought in a decreasing percentage of local government revenues. There is great probability that the property tax will decrease in relative and absolute amounts both. State grants and state-shared taxes are the chief substantial source of added local income. In the country as a whole they will continue to be increasingly important. Shared taxes should probably replace state grants since the latter stimulate one or more local activities at the expense of others.

Some newer types of revenue have been developed recently. The city of Philadelphia for the year ending March 31, 1944, collected $20,700,000 from its local payroll or earned income tax. In March, 1944, with the tax reduced to 1 percent, the city collected as much as it did in March, 1943 at 1½ percent. Here is a local tax, locally collected, and responsive to community income. Industrial and mercantile centers elsewhere should consider its value to them. Few cities can successfully levy a sales tax as New York does.

Parking meters are good revenue producers and take the money from persons who park on expensive pavements. Birmingham, Ala., is getting large returns from local liquor and tobacco taxes. Several other cities tax tobacco. Detroit has just increased its regular license fees. In most communities the revenue from licenses, while limited, should be adequate to cover inspection and policing costs. Several California cities are licensing all business and manufacturing establishments at a flat nominal fee plus $1 or more per year for each employe. Admissions taxes are being used extensively, particularly on the West Coast and seem like a fair tax.

Many small communities derive most of the municipal income from utility profits. This is really a tax on tenants but called by another name. Special service charges are increasing for such municipal activities as garbage and refuse collection, and sewage disposal.

The major sources of revenue are still the local property tax and state distributed revenues. Minor adjustments can and will be made. In the industrial areas some tax responsive to community income should be used more extensively. If this is not done, then the greatest change in local government revenues will be a shift to more state-collected, locally shared revenues.

8.

The amount of money available from municipal funds alone for post-war construction and reconstruction is not determined by the amount of deferred maintenance or deferred public works, but is really limited to the sum of (a) the reserves (b) the salable loans that the electorate and governing bodies will approve, (c) mild increases, if any, in local tax rates, and (d) shifts from expenditures for present operating costs to expenditures for construction and reconstruction. The amount of money thus available will run somewhere between 1½ billion and 3 billion dollars a year for 5 years. Capital expenditures which create annual operating or maintenance charges will be further limited by the amount of operating costs that the municipal budgets can absorb. For example, hospitals cannot be built unless their operating losses can be absorbed.

9.

The states should share with their localities the revenues derived from motor vehicle users and from other such activities where the activities cause direct and unusual expenditures at the local level. The greatest fiscal injustice on record is the use of motor vehicle revenues for every purpose except the construction and maintenance of city streets and other traffic facilities.

10.

Federal aid will be necessary and justifiable in a few areas now most affected by war industry and war activity. The cost of extending such aid may be kept at a minimum by distributing aid where it is needed and to the extent it is needed. The more the states can do the less the federal government will need to do. When federal grants are made the needs are met and then an entire layer of funds is distributed over the entire country, regardless of need. Where the need is not great, the states and the localities should make honest effort to meet it.

11.

Whether or not federal aid is extended on a large scale *after* the war, the federal government should help *now* to plan the course of post-war activities in the areas most seriously affected by the war. These municipalities have been unable to divert money or attention to their post-war problems. All levels of government will profit if the planning in these areas can be done now, even though the federal government may have to take the leadership and spend some money in these localities to the exclusion of others. On the other hand, the vast majority of cities should do their own planning for their public works.

12.

A determination of federal policies on post-war grants and post-war public works would help the localities with their planning now. It is impossible for either the states or the localities to make post-war plans with respect to relief and public works unless they know what the federal policy will be.

13.

Grant-in-aid policies need to be revised. The grants from the states or from the federal government should cover a broad, instead of a very limited purpose. A smaller amount of grants will do far more good in this way and cause less disruption of state and local services. Where the grants are made for a very limited object, they stimulate one narrow activity, frequently at the expense of all other activities.

14.

There may be need for some federal agency to extend credit on a sound basis to municipalities in the same way that the PWA did through the RFC during the depression years. For many municipalities this will be a highly desirable alternative to grants or gifts. The history of the loans made to municipalities by the RFC and PWA indicates the soundness of the loans as they were made. The loans can be made in such a way that they need not interfere with the ordinary channels for the distribution of municipal securities.

15.

Inflexible state constitutions have prevented the states and their municipalities from developing the proper form of fiscal policies and governmental structure at the state and local level. The state constitutions must be revised to bring about economy of federal and state funds, to permit rational state administration of finances, and to facilitate the revision of the local revenue systems and the abolition of inadequate local units of administration.

16.

Finally, municipalities can best prepare for the post-war period by putting their houses in order now. What they *do* now, determines what they will be compelled *to do* and what they will be compelled *to accept* in the post-war era. Municipalities that are weak at the end of the war must spend their time at the mercy of others. But the municipalities which take constructive steps now by

(a) Establishing reserves of money and credit
(b) Reorganization of activities
(c) Removing shackles imposed by state constitutions, state statutes and local laws and charters
(d) Developing realistic plans around a master plan:

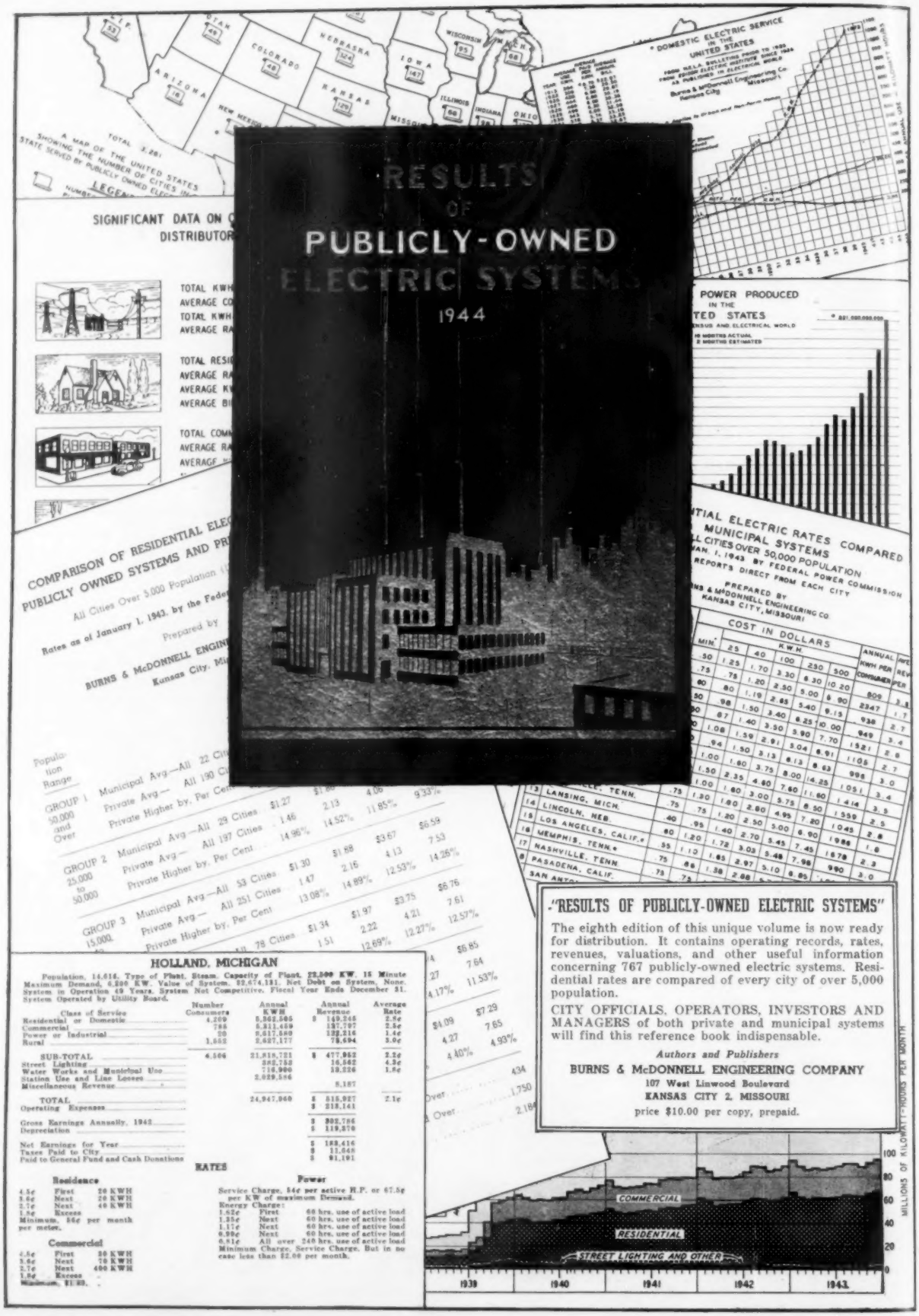
these municipalities will be best fitted to meet any war or post-war demands that may be made upon them.

Leon H. Keyserling Wins $10,000 Pabst Award

IN the list of winners of the Pabst Post-War Employment Awards, announced last month by the Board of Judges of the contest, was one name well known to many readers of THE AMERICAN CITY—Leon H. Keyserling, General Counsel of the National Housing Agency. Mr. Keyserling's essay, "The American Economic Goal," won for for him the second prize of $10,000, the first award of $25,000 going to Herbert Stein, Chief of the Economic Analysis Section of the War Production Board.

As might have been expected, Mr. Keyserling, while recognizing the achievement of full employment as predominently a task for the system of American enterprise, sees an important place for government, incentives to private enterprise in housing and urban redevelopment, supplemented by direct government programs of public works where full employment is not otherwise achieved. He suggests, for example, that "Interest subsidies on insured, long-term, low-rate loans for acquiring and clearing blighted urban areas, could stimulate 80 billion dollars worth of city rebuilding, mainly by private construction, over a 10- to 15-year period."

"Public works and related undertakings to provide jobs," in Mr. Kyserling's opinion, "instead of being planned in isolation, should be coordinated with plans for expansion of American enterprise, so that they will be really supplementary to the employment capacity of American enterprise. Public works should be planned to enrich our environment instead of just 'making jobs,' and to avoid new manpower maladjustments by sporadic over-expansion of construction. The harnessing of water power, conservation of natural resources, improvement of public facilities for communication, are all drastic aspects of the American Economic Goal."



HOLLAND, MICHIGAN

Population, 14,614. Type of Plant, Steam. Capacity of Plant, 22,500 KW. 15 Minute Maximum Demand, 6,200 KW. Value of System, $2,674,131. Net Debt on System, None. System in Operation 49 Years. System Not Competitive. Fiscal Year Ends December 31. System Operated by Utility Board.

Class of Service	Number Consumers	Annual KWH	Annual Revenue	Average Rate
Residential or Domestic	4,209	5,362,505	$ 149,246	2.8¢
Commercial	786	5,311,469	137,797	2.5¢
Power or Industrial	20	9,617,580	132,216	1.4¢
Rural	1,552	2,527,177	78,594	3.0¢
SUB-TOTAL	6,566	21,818,731	$ 477,852	2.2¢
Street Lighting		262,750	16,562	6.3¢
Water Works and Municipal Use		716,900	19,226	1.9¢
Station Use and Line Losses		2,029,506		
Miscellaneous Revenue			8,187	
TOTAL		24,947,960	$ 518,927	2.1¢
Operating Expenses			$ 218,141	
Gross Earnings Annually, 1943			$ 300,786	
Depreciation			$ 119,870	
Net Earnings for Year			$ 180,916	
Taxes Paid to City			$ 13,048	
Paid to General Fund and Cash Donations			$ 91,191	

RATES

Residence

4.5¢ First 20 KWH
3.6¢ Next 20 KWH
2.7¢ Next 40 KWH
1.8¢ Excess
Minimum, 54¢ per month per meter.

Commercial

4.5¢ First 20 KWH
3.6¢ Next 70 KWH
2.7¢ Next 400 KWH
1.8¢ Excess
Minimum, $1.80.

Power

Service Charge, 54¢ per active H.P. or 67.5¢ per KW of maximum Demand.
Energy Charge:
1.65¢ First 60 hrs. use of active load
1.35¢ Next 60 hrs. use of active load
1.17¢ Next 60 hrs. use of active load
0.99¢ Next 60 hrs. use of active load
0.81¢ All over 240 hrs. use of active load
Minimum Charge, Service Charge. But in no case less than $2.00 per month.

"RESULTS OF PUBLICLY-OWNED ELECTRIC SYSTEMS"

The eighth edition of this unique volume is now ready for distribution. It contains operating records, rates, revenues, valuations, and other useful information concerning 767 publicly-owned electric systems. Residential rates are compared of every city of over 5,000 population.

CITY OFFICIALS, OPERATORS, INVESTORS AND MANAGERS of both private and municipal systems will find this reference book indispensable.

Authors and Publishers

BURNS & McDONNELL ENGINEERING COMPANY
107 West Linwood Boulevard
KANSAS CITY 2, MISSOURI
price $10.00 per copy, prepaid.

New York's "Housing Week"

Public officials join with business, professional, civic, welfare, and labor groups in studying needs and methods for post-war housing and neighborhood improvement.

WITH Senator Robert F. Wagner and Mayor F. H. LaGuardia as honorary chairmen, and with the sponsorship or cooperation of more than a hundred public agencies and city-wide and neighborhood organizations, the Citizens' Housing Council of New York conducted last month a unique and successful experiment in civic education. For seven days—May 21-27—New York observed "Housing Week." A notable series of events—public meetings, radio broadcasts, film showings, school programs, poster and essay contests, and exhibits—combined to create a city-wide awareness of housing and neighborhood improvement needs and to facilitate a meeting of minds for the solution of these problems.*

Especially significant were talks by three leaders in the fields of finance, real estate, and labor. One of these addresses marked the opening luncheon of Housing Week, held jointly by the Metropolitan Association of Real Estate Boards, Mortgage Conference of New York, New York Building Congress, and the Savings Banks of the Metropolitan Area. At this meeting, George S. Van Schaick, vice-president of the New York Life Insurance Company, made a strong plea for the end of hostilities between public housing for low-income groups and housing financed by private or semi-private enterprise to provide for the great mass of our population:

As an Insurance Executive Sees the Problem

"It is established public policy that unsafe and unsanitary and indecent living conditions are injurious to the health, safety and morals of the nation. Government—federal, state, and municipal—can and should have a permanent role in housing. That role should be to provide a framework within which private enterprise may function effectively and profitably. To begin with, government should exercise the traditional function of regulation and enforcement. Thus it should strengthen and modernize building codes, keep out the exploiters, and thereby protect those who would provide decent housing. It should create and conserve values by intelligently planned long-range zoning. It should be a fact-finding, fact-disseminating and coordinating agency, developing standards of design and construction and even perhaps of finance.

"It is familiar and recent history that the FHA has done much to sell to the public the fully amortized mortgage which helps to protect against obsolescence and depreciation and thus exerts a stabilizing influence in mortgage financing. This is a good example of helpful government leadership.

"But government has also the traditional responsibility of taking care of the needy, and public housing is primarily the fulfillment of this obligation—a purely relief function. If, as a by-product, government can thereby demonstrate how housing may be planned to secure the maximum of light and air, privacy, recreational facilities, and elimination of traffic hazards at a reasonable cost, it will go far to stimulate private industry to the same end but for an entirely different market.

"The golden opportunity is thus presented to private investors to take advantage of the contribution that research and experience in the field of public housing have already presented. Private investors may well analyze the need for investment housing and attack the question of urban blight not by abandonment but by planning and rebuilding in order to provide for the needs of the long neglected middle income groups. This coordination of programs of private with those of public housing is highly essential.

"The housing movement of today is a counter-attack upon the withering blight of our greatest cities. There is no occasion for disunity or hostility. There is an insistent demand for each field, both public and private, and Housing Week 1944 ought to bring an end to pettiness and bickering."

HOUSING WEEK
MAY 21-27
to plan for good homes and communities
organized by THE CITIZENS HOUSING COUNCIL OF NEW YORK, 470 fourth avenue

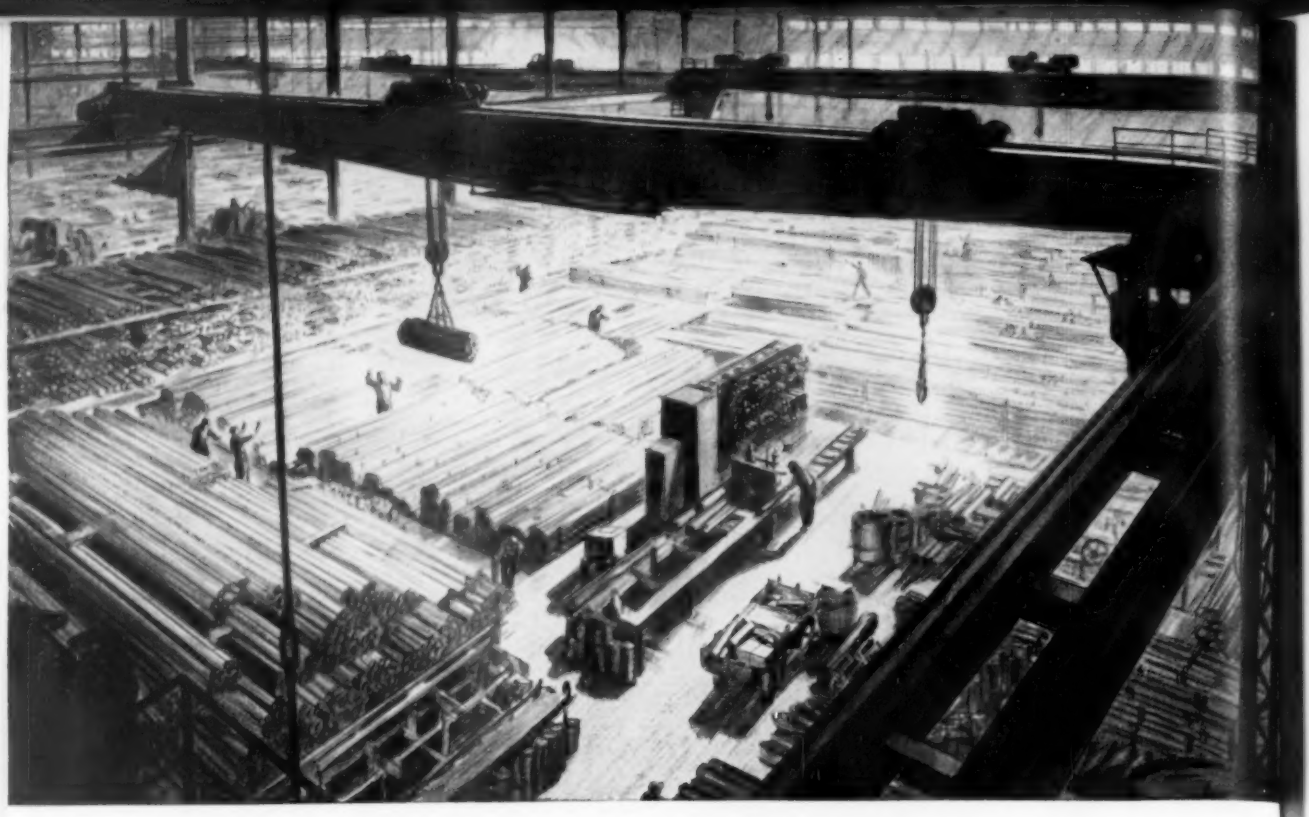
The poster of New York's Housing Week

A Private Realtor's View of Public Housing

A similar plea to public and private housers to reconcile their differences in a spirit of reason and fairness, and to realize that both have much to offer in their respective spheres, was voiced the following evening by Roland R. Randall, past president of the Philadelphia Real Estate Board and chairman of the Philadelphia Housing Authority. Speaking before the Citizens' Housing Council and its guests, Mr. Randall expressed his conviction that not only is the "broad problem of housing a governmental responsibility," but "subsidized public housing is an inescapable necessity." Continuing, Mr. Randall said, in part:

"It provides the leverage for modernizing our cities through clearance and redevelopment with sound construction; proper layout to insure light, sunshine and air; recreation space, and facilities to add to the livability feature. It provides neighborhood protection from the spread of blight. . . . I know from personal

* Organization and officials in cities wishing to consider a future Housing Week program may obtain at nominal cost from the Citizens' Housing Council of New York (470 Fourth Avenue, New York 16) the Calendar of Events of Housing Week, a pamphlet "Home or Slum," and the June issue of CHC *Housing News* reporting some of the highlights of the week's activities.



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knowledge, as it has been clearly proven by the projects of the Philadelphia Housing Authority and many others, that public housing is more than just brick and mortar shelter, but, of even greater importance, it is the means of educating people to higher standards of housekeeping and social conduct. It is definitely the most practical means through the creation of a better environment of solving difficult social problems. Good housing in good neighborhoods, properly managed, maintained, directed and controlled, means not only happier and healthier people, but better citizens—and these are priceless national and community assets. . . .

"Permit me to make this clear. I do not regard public housing as a panacea, as some would have us believe, nor as a menace, in accordance with the thinking of others. It is neither. As a matter of fact, on a comparative basis, I think the amount of public housing we should have is relatively very small, but, it is an indispensable part of the housing picture.

"Public subsidized housing may well serve to establish the nucleus in certain areas and neighborhoods by creating and stabilizing real estate values around private interests can build and extend their work of re-development, reconstruction and rehabilitation. . . . The possibilities are enormous and practically unlimited if we have the courage and intelligence to approach the task. But we must realize now, before it is too late, that failure to reclaim our blighted areas in the immediate post-war period may mean the loss of an opportunity never again, in our age, so ripe for fulfillment. The time is phychologically right. The war has blasted people out of the rut of their ordinary habits of living and thinking and they are expectant of many progressive changes in the post-war future. . . .

"I believe it feasible and desirable that large scale planned housing projects should be undertaken by private industry, by insurance companies and other large financial institutions, with subsidies, if necessary, in the form of tax reductions, or land provided at a cost value based on re-use, with the loss on present inflated values written off and absorbed by the city, state, or federal government. I believe inducements should be made to private industry and to large financial institutions with adequate resources sufficient to undertake this sort of redevelopment; inducements such as would eliminate the risks that are now of such a size and character as to make any approach to this type of housing community by such agencies impossible. Possibly a broadening of the FHA mortgage insurance system can be made so that it will permit private agencies with large capital resources to engage in this type of venture with assurance of adequate return with safety. . . .

"In looking ahead to the problems of a post-war building program, we should recognize clearly the restrictions and legal limitations which now make concerted action by public and private agencies extremely difficult or impossible, and we should act to remove these obstacles, entanglements and barriers."

Labor's Responsibility in Post-War Housing

The principal presentation of organized labor's point of view during Housing Week was an address before the Citizens' Housing Council by Matthew Woll, vice-president of the American Federation of Labor. Here again a strong plea for common counsel and unity of action was voiced:

"Our first step in the solution of the post-war housing problem is over-all community planning in which business, management, and labor, together with public representatives of the community, could combine their judgments to arrive at sound and realistic plans for the entire metropolitan area. Equipped with such plans and prepared to carry them out, we need not be afraid of losing our leading position as a city in providing opportunities for employment and living within our boundaries. To do this is a matter of private responsibility, exercised through agreed channels within a framework of agreed public policy. . . .

"As the largest single group of users of housing, labor has special responsibility for making sure that minimum standards of construction, durability and livability are met in all new housing construction. Labor has long been recognized that sound and proper housing calls for sound and proper neighborhood planning.

"There are many misconceptions regarding labor's role in housing construction. In some promotional literature labor has been pictured as an opponent of technical progress, and especially of prefabrication. I can state emphatically that such is not the case. Technical progress in sound home construction has been making rapid strides step by step and year by year. The very fact that millions of units of temporary and demountable housing, some partially and some fully prefabricated, have been built by the union workers from the ranks of the American Federation of Labor in the course of the war years belies this contention. . . .

"Action with regard to land acquisition, financial policies, construction, development, zoning, and planning in the entire community, is a joint responsibility for joint action of all representative groups of citizens. Labor is willing and ready to assume its proper responsibility of cooperating with all groups in the community to deal with these problems. Not as individual groups, but as a common enterprise of citizenry, we must learn to work together with the state and city governments and with our local housing authorities in the formulation of both future plans and the programs of action."

Constructive Suggestions

The value of Housing Week was demonstrated not only by the remarkable degree of harmony among its participants, but also by many constructive suggestions which will doubtless have careful consideration by some of the cooperating organizations and public agencies. A four-point legislative program proposed by Edward Weinfeld, former State Commissioner of Housing, is a case in point. Mr. Weinfeld recommended: (1) authorization of additional loan funds of $115,000,000 for public housing, the full balance available of the original authorization; (2) the additional subsidies necessary to carry these loan funds; (3) adequate safeguards to protect families living in substandard areas who are forced out of their homes by development companies receiving public benefits of tax-exemption and condemnation; (4) amendment of the Public Housing Law to authorize loans by the state to housing companies at the rate of interest required to be paid by the state in borrowing funds. The latter provision, Mr. Weinfeld said, "should mean a reduction of approximately $2 per month per room and would make available housing for so-called white collar income groups—the no man's land in housing."

A critical note as to New York's billion dollar program of post-war public works was sounded by Councilman Stanley M. Isaacs, who saw "a huge number of costly individual structures going up with no attempt to combine buildings, no effort at neighborhood."

"I, for one, [said Mr. Isaacs] believe that the city can never afford to carry through much of this program. We just cannot have separate police stations, separate fire houses, separate welfare centers, separate health centers, separate schools and separate libraries, separate garages for the Borough President and the Department of Sanitation, etc. Somehow or other, health and welfare activities must be combined in one central structure; schools and libraries must be housed in one building; there must be one central garage for all the neighborhood needs of the various city departments; police and fire stations combined in separate wings of one building. This would mean enormous savings in construction; this would mean enormous savings in annual maintenance costs."

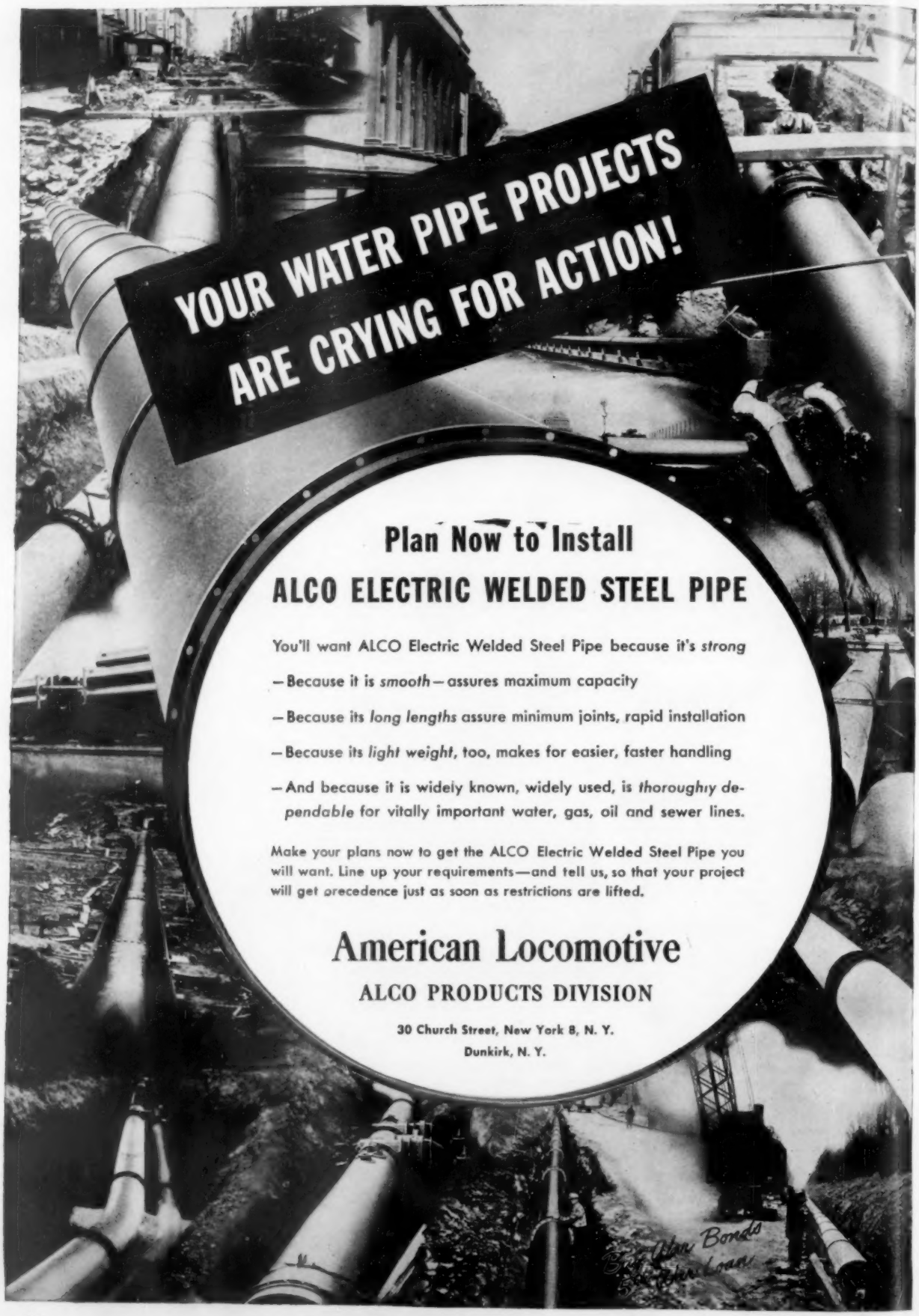
If, as an aftermath of New York's Housing Week, suggestions such as these can have the calm and serious consideration that they seem to merit, and if the unity of effort stimulated during these seven days can be carried forward through the critical months and years immediately ahead, the Citizens' Housing Council and its collaborators ought to feel well repaid for their Housing Week efforts.

A Significant Report on Residential Density Regulations

Just as this issue of THE AMERICAN CITY is going to press, publication is announced by the Citizens' Housing Council of New York of a 102-page mimeographed report on "Densities in New York City."

This report has nation-wide significance because it attempts to correct existing confusions in density terminology by proposing a new set of definitions for general adoption and suggesting uniform methods for the application of the preferred standards.

More adequate consideration will be given to this density report in the July issue.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More Cities Report Post-War Plans

Abington Township, Pa.

E. Raymond Ambler, Secretary:

2. Construction of a sewage disposal plant and extensions to the township sanitary sewer system; an incinerator for garbage and refuse disposal; improvement of existing highways; construction of new roads and sidewalks; expansion of recreational facilities such as parks and playgrounds; improvements to a proposed Memorial Park in honor of the men and women of Abington Township serving in the War; alterations to an existing building to convert same into new police station and garage
3. Departments of Public Affairs, Public Safety, Public Works, Public Health
4. To study and recommend needed improvements in Abington Township to be undertaken by the Board of Commissioners in the post-war period.
5. Approximately $100,000 is available for post-war projects—same is invested in U. S. Government seven-eighths percent Certs. of Indebt.

Albuquerque, N. M.

Clyde Tingley, Mayor:

2. Auditorium $500,000; storm sewer $200,000; sanitary sewers $100,000; water works $200,000; subways and underpasses $500,000; paving $250,000; parks $50,000
3. Engineering Department
4. No
5. Yes, substantial reserves set aside.

Anderson, S. C.

J. L. Sherard, Mayor:

2. Only project now approved is the construction of a new abattoir to cost about $30,000.
4. No
5. Retiring portions of bonded debt in order to be ready for future improvements.

Bartlesville, Okla.

Ross Taylor, City Manager:

2. Extensions and improvements to water system; resurfacing old brick pavements; new paving; construction of new police station and jail
3. Engineering Department
4. Yes. Recommends to City Commission.
5. No, impossible under Oklahoma law

Bluefield, West Va.

E. P. Mitchell, City Manager:

2. Paved streets; sidewalks; park development
3. Board of Directors and City Manager
4. Yes. Advisory
5. No, there are no extra funds available

Bronx, N. Y.

Arthur V. Sheridan, Commissioner of Borough Works:

2. Highways; parkways; sewage disposal; water supply; housing; hospitals; health centers; schools; new asphalt plant
3. Departments of Education, Fire, Health, Parks, Police and Public Works are a few of the departments engaged in post-war plans.
4. Yes. Cooperates with the Mayor, the Board of Estimate, the Budget Director, etc., to work out plans for future.
5. Hope that Federal Funds will cover the major portion of program. The remainder of financing will have to come from the city through its various forms of raising revenue for public improvements.

This is the fourteenth installment of brief reports from municipalities of over 10,000 population throughout the United States which have begun to plan for post-war public works or other improvements to be undertaken when materials and manpower become available. Previous replies (541 in number) to The American City's questionnaire on this subject have appeared in the issues of November and December, 1942, January, February, April, May, July, August, and September, 1943, and February, March, April, and May, 1944.

Question No. 1 asking if such planning was under way locally, brought almost no negative replies. The other four questions were:

2. If so, what are the principal types of projects contemplated in these plans?

3. By what departments of the municipal government are such plans being made?

4. Does your municipality have a planning commission? If so, what responsibilities and powers does that agency have as to post-war planning?

5. Is your municipality setting aside any reserves, in war bonds or otherwise, for post-war public works?

Answers to these four questions, from 37 municipalities not previously reporting, appear on this and the following two pages.

Cambridge, Ohio

Vern F. Ross, Mayor:

2. Public parks; water ways diversion
3. City Engineer and Board of Control
4. No
5. No

Clairton, Pa.

John J. Mullen, Mayor:

2. A city wide street; sewer improvement program; construction of a new incinerator plant; probable construction of a new city building; improvement of existing parks and recreational facilities
3. City Council as a Department of the whole
4. Yes. Considers and recommends to City Council on proposed public improvements and zoning requirements
5. We have not done so yet.

Danville, Va.

Howard Hylton, Secretary, Danville Chamber of Commerce:

2. Various public works
3. Danville Community Planning Council (Chamber of Commerce Planning Committee) now engaged in surveys of promotion of projects
4. No
5. Not specifically earmarked, but funds are being reserved.

Dayton, Ohio

M. P. Heavenrich Jr., Manager, Department of Government Research Chamber of Commerce:

2. Railroad elevation (completion of program undertaken before the war); marginal river freeways; bridges; swimming pools; recreational facilities; water main and water sewer extensions; fire drill tower; water softening plant; administration building for municipal airport; public parking facilities; and many others
3. All departments contribute suggestions; many of these projects were included in a "six-year plan" of the City Planning Commission developed some time ago. The engineering division of the service department works on details.
4. Yes. Only advisory. Its activities at the moment are limited. Reemployment of a full time Secretary-Engineer to replace men lost to the Army is under consideration. This will, if accomplished, give impetus to the work of the Commission.
5. Under Ohio law this is not practicable. However, local indebtedness is being rapidly retired; and there is a wide margin for issuance of bonds if that is deemed advisable.

Donora, Pa.

A. Z. Chambon, Burgess:

2. Residential expansion; street improvements; construction of airport
3. Planning Commission
4. Yes. All powers vested by the Pa. Borough Code
5. No

El Paso, Texas

J. E. Anderson, Mayor:

2. Grade separation; highways; storm sewers
3. City Engineering Department, State Highway Department
4. Yes. Advisory
5. No, but it is reducing its debt to be in in a better financial position.

Fort Worth, Texas

W. O. Jones, Director of Department of Public Works:

2. Street improvement; paving; lighting; drainage structures; sewage treatment and sanitary sewers; water disposal
3. Engineering Division and Department of Public Works
4. Yes. Makes recommendations.
5. Yes

Hamtramck, Mich.

I. M. Kopkowski, City Engineer:

2. Sewers; alleys; City Hall; recreation building; library
3. City Engineer
4. Yes. Supervision over program
5. Yes, for post-war plans

Hobbs, N. M.

J. F. Maddox, Chairman, City of Hobbs Planning Commission:

2. The city is negotiating with competent engineering firm to survey the city and prepare a master plan of development for the entire community
3. Negotiation being handled by Planning Commission, subject to approval of City Council
4. Yes. See above
5. Yes

Lawton, Okla.

Wyatt B. Hendrick, City Engineer:

2. Airport; streets; recreation areas

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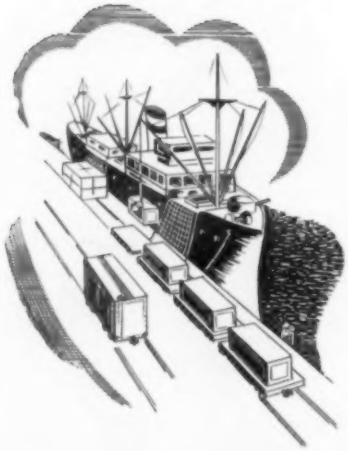

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3. City Engineer
4. Yes. Acts in advisory capacity to City Council.
5. No

Norfolk, Va.

J. D. Wood, Mayor:

2. Sewerage disposal plant ($6,000,000); a new incinerator ($300,000); streets to be extended and widened; building of a vehicular tunnel between Norfolk and Portsmouth
3. No Planning Commission other than the City organization itself
5. We are endeavoring to build up a financial backlog to go as far as possible, but not planning to go very far on borrowed money.

Minasha, Wis.

William H. Jensen, Mayor:

2. Municipal building; new bridge; street work
3. General City
4. Yes. Governed by statute
5. Yes

Township of Maplewood, N. J.

H. W. Heilmann, Director Public Works:

2. Drainage and flood control; east branch of the Rahway river, crooked brook, lighting brook, etc., also new equipment building for Bureau of Public Works.
3. Bureau of Public Works
4. Yes. Advisory body to the Township Committee in all problems.
5. Money has been appropriated for down payments on improvements

Minot, N. D.

V. E. Sandberg, Mayor:

2. Paving; new well; general city improvement, e.g. water system and sewer system
3. Street and Light Department, Water and Sewer Department
4. Yes. Advisory
5. Yes

Palestine, Texas

J. E. Early, Executive Engineer:

2. New underpass; street paving (widening) and sidewalks; gravelling secondary streets; probably park improvement
3. Plans will be drawn in office of Engineer.
4. No
5. No, we operate on a cash pay-as-you-go basis.

Paris, Texas

W. F. Hicks, City Engineer:

2. Water works improvements and extension; sewage disposal and sewer mains; parks and playgrounds
3. City Engineer
4. Yes. Advisory
5. No

Queens, N. Y.

William Raisch, Consulting Engineer, Borough of Queens:

2. Sewers; highways; bridges; street widenings
3. Bureau of Highways, Bureau of Sewers; Topographical Bureau
4. Yes. It is charged with the preparation of the Post-War Program for the entire city from lists of projects submitted by the various departments for recommendation to the Board of Estimate.
5. Yes

Rochester, N. Y.

August H. Wagener, Commissioner of Public Works:

2. Increased water supply; new pavements and reconstruction of old pavements; new sewers and replacements of existing sewers; increased airport facilities
3. Engineering Department
4. Yes
5. Yes

Rutland, Vt.

W. N. Temple, Mayor:

2. Cement streets; water reservoir; city garage
3. Public Works Department
4. Yes. Recommendations
5. No

Santa Fe. N. M.

Lawrence A. Tamme, City Clerk-Treasurer:

2. Street improvement; flood control; park improvement
3. City Planning Board
4. Planning Board acts purely in an advisory capacity
5. No. Work will be done by funds derived form sale of general obligation bonds which have been voted

Schenectady, N. Y.

Fred W. Fisch, Director, Bureau of Traffic and City Planning:

2. Deferred maintenance; public buildings (e.g. health clinic); street and sewer program; parks
3. City Council, City Manager, Bureau of Traffic and City Planning, City Planning Commission, Housing Authority, etc.
4. Yes
5. No. Contemplate "pay as you go" policy in as far as possible

Sharon, Pa.

Myron W. Jones, Mayor:

2. Paving of streets; new city building garage
3. By authority of City Council
4. Yes

Shorewood, Wis.

E. G. Teschen, Village Manager:

2. Installation of a water supply plant; resurfacing of roads; replacement and extension of electric wiring for street lighting
3. Engineering and electrical departments.
4. Village Board acts as planning Commission. It has full power.
5. Various plans now under consideration

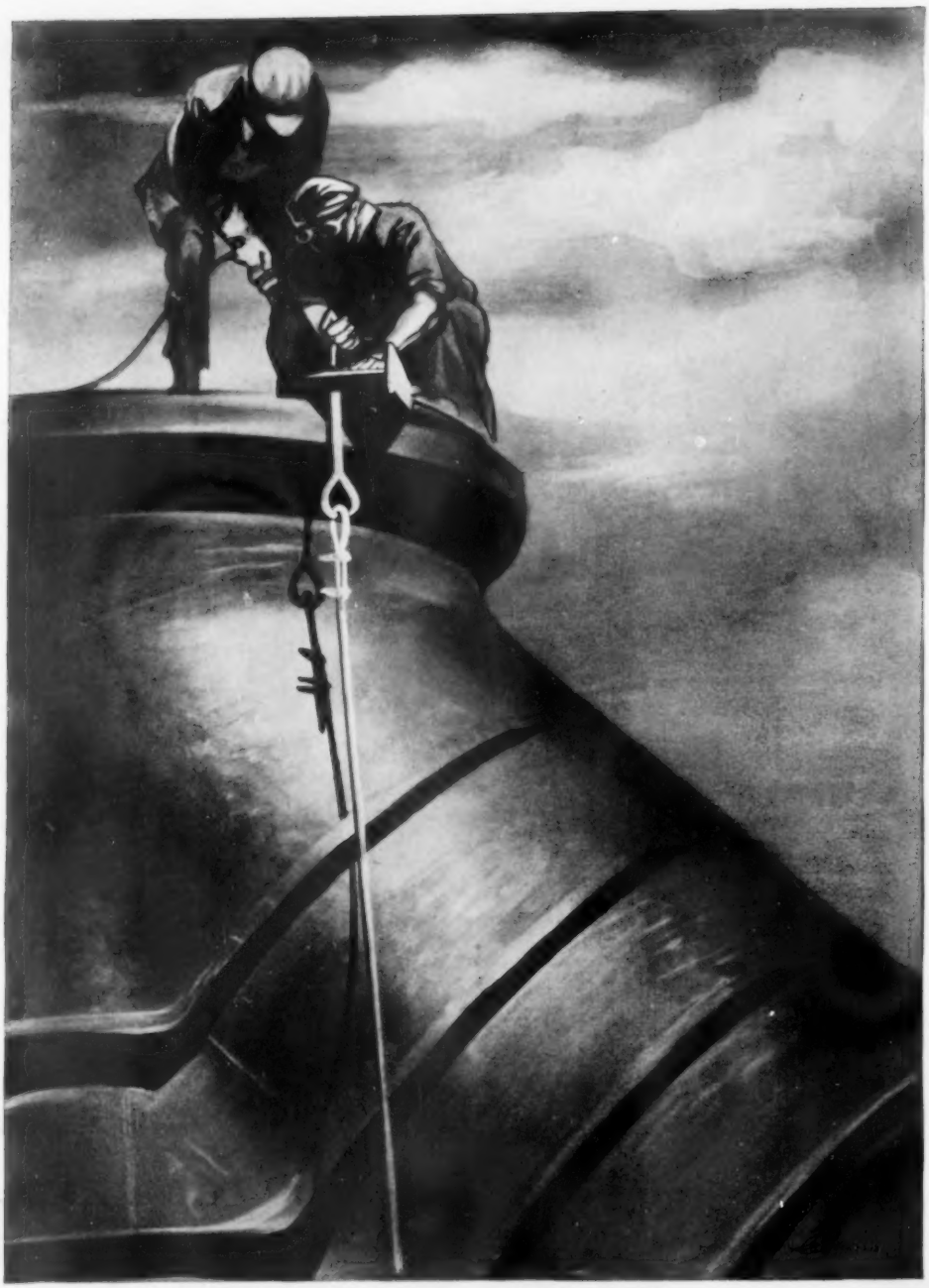
Scranton, Pa.

Ernestie Kelly, Secretary to Mayor:

2. Post-War Planning Committee is just being formed.

NOW'S THE TIME TO GET THEM BLUEPRINTED

The Tennessee Planner, *official publication of the Tennessee Planning Commission, urges local and state authorities to plan, design, and make specifications now for public works projects in preparation for post-war opportunities and needs.*



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More Cities Make Post-War Plans

(Continued from page 101)

Stockton, Calif.

LYLE PAYTON, City Engineer:

2. Street pavement; sewage plant enlargement; grade separations
3. City Engineer
4. Yes. Prepares and recommends a list of Post-War projects
5. No

Stoneham, Mass.

EDNA L. TOLMAN, Asst. Town Clerk:

4. Planning Board

The mandatory duties of a Planning Board are:

a. To make careful studies and prepare plans of the resources, possibilities and needs of the town
b. Upon completion of any such study, to submit to the Selectmen a report thereon, with recommendations
c. To make an annual report to town giving information regarding the condition of the town and any plans for its development
d. To take custody of the records and plans of the board
e. To make and perfect a master plan
f. To pass an subdivision plans submitted for its approval

5. Not yet

Tamaqua, Pa.

H. W. KLECKNER, Chief Burgess:

2. Cleaning and rip-rapping Schuylkill River; cleaning Wabash creek; various other plans under consideration
3. Borough Council, Tamqua, Pa.
4. No
5. Yes

Terrell, Texas

H. C. BARNES, Mayor:

2. Paving; water works; enlargement of light plant; new school
3. We have asked the Chamber of Commerce to set up a Planning Board for all types of post-war planning.
4. No
5. Yes, $200,000

Wewoka, Okla.

E. C. ALDRIDGE, Mayor:

2. Jail; fire station; city hall
3. ———
4. No. City Board consists of the Street Commission, the Health and Finance Commissions and the Mayor
5. ———

Watertown, S. D.

F. J. HUBBARD, City Auditor:

2. Sewers
3. Sewer Department
4. No
5. Yes

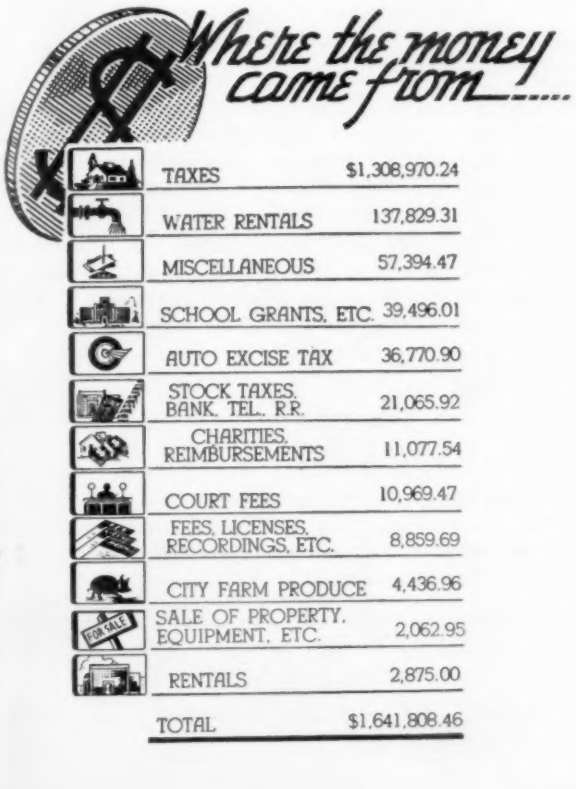
Yakima, Wash.

A. W. MORGEN, Mayor:

2. City Hall; administration building; new fire station; paving Yakima; extension of lighting system to city limits; replacing wooden water mains; filtration plant at intake; 2 new reservoirs
3. Yes. They make recommendations to the City Commisison of projects which are needed now, and also recommendations of projects needed in a long-range program.
4. Yes
5. Yes

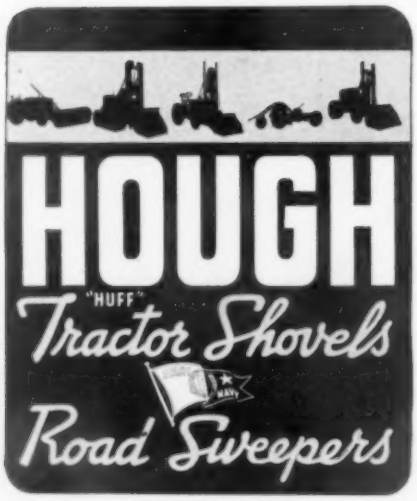
Lewiston, Maine, Analyzes Its Budget

Charts from the 1944-1945 "Municipal Budget," Prepared by the Auditor's Department of Lewiston



Plus Cash Balance, March 31, 1942 • $99,290.64

With a plus cash balance at the end of the fiscal year of $168,228.01, the Auditor's Department of the City of Lewiston, Maine, uses these graphic illustrations to show taxpayers how their taxes are derived and allocated. Another chart in the report shows the comparative tax rates of 21 Maine cities, ranging from a high of $90 to Lewiston's low of $38. Detailed fiscal information covering all city activities is also included in the 123 mimeographed pages of tabulated budget figures for the year, 1944-45.



Cities using Payloaders are able to do a lot of work which would otherwise be deferred or "drag along." The versatility of the Payloader makes it a profitable equipment investment for cities large and small.

The jobs which the Payloader is performing expeditiously and with minimum manpower include—street repairs, removing broken pavement, cleaning up debris, leveling garbage dumps, handling sewage sludge, leaves and snow, piling and handling coal at the city lighting plant, handling pipe, sewer rings, hydrant and lighting standards, etc. Available attachments include backfiller blade, crane hook and one-way snow plow. The unit can also be used as a heavy duty drawbar tractor, either with shovel attached, or with a heavy duty bumper.

The Hough "HL" Payloader, pictured above, is an all-around material handling and construction machine. It is designed, engineered and built as a complete tractor unit—not a tractor attachment. The engine is at rear over the rear drive axle, giving better weight distribution and greater drawbar pull. Full maneuverability and short turning are provided. The operator sits high and forward for complete visibility and operation control.

Forty to sixty tons of material per hour can be handled at a low cost per ton. Bucket capacity, 1 cu. yd.; hoist capacity, 3,000 lbs.; drawbar pull, 8,000 lbs.

Ask for Bulletin 144 containing complete data. Bulletin 143 describes smaller model "HS."

Hough Hydraulic Loader on a Case tractor. Hough also builds hydraulic and cable operated loaders and shovels for use on crawler and wheel type Allis-Chalmers and International tractors.

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A Water Rates Comparison

is one of the easiest ways to get an irritated rise out of water-works men . . . Please hold your fire until you read this one.

FREQUENTLY one reads publicity releases from various municipalities carrying statements to the effect that the water rates in their particular community are the "lowest in the state (or nation) for their particular bracket." From this, one would infer that there has been some master tabulation made that makes the comparison of water rates as easy as the measurement of distances, and in this super-water rate race, the community in question placed a brilliant first.

On the other side of the fence there are those who testily question your right to invade the sanctity of their department and inquire about the cost of operating their water works. With a good deal of justification they point out how difficult it is to put these comparisons on an equitable basis because of differences in both operation and bookkeeping, even when the sources of supply, the methods of treatment, and distribution are similar.

Unfair Comparisons?

Those who attended the annual water-works conference at Cleveland last year will recall the forthright statement made by Victor Wier, Superintendent of the St. Louis Water Company, to the effect that 99 out of 100 water rate comparisons were likely to be unfair. We might add to this by saying that undoubtedly that lone hundredth rate comparison also has some unfair characteristics if scrutinized closely enough.

Mr. Wier also expressed the wish that some organization like the American Water Works Association would collect water rate data so that anyone wishing to make rate studies could contact this central office rather than bother water-works men throughout the country. This resulted in a somewhat wistful expression among certain members of our staff who have, since 1933, been gathering just that type of data. These data also have been the basis of at least one well-prepared paper appearing in the Journal of the American Water Works Association and have received wide circulation as reprints.

To those who view rate comparisons as a type of competition, these studies are of no value and may actually be dangerous since excessively low rates may stifle needed improvements.

With Broader View

However, to those who take a somewhat broader viewpoint and sprinkle any cost study with a necessary allotment of common sense, a brief comparison of rates that we have run in our latest series should be beneficial.

In this, we have tabulated the figures under the heading of "Consumer Costs." These give a measure of difference between established rate schedules since they tell how much a certain fixed amount of water will cost in each community. The amounts in each case have been 3,000-5,000 and 10,000 gallons per month; within this range most domestic consumers will lie. This, of course, rules out the important consideration of large industrial users. However, since they are numerically fewer than the domestic users and their rates are often established by separate negotiation, it seems reasonable to disregard them in a comparison such as this.

Four Classifications

We further broke down the figures into sources of supply. There are only four of these; we have considered surface supplies and ground water supplies, and have broken them further into those that have only simple chlorination and those with more complete treatment.

To avoid any inference that we are setting out one city as better than another because of low consumer costs, we are listing each city alphabetically, and we are *not* averaging consumer costs. You may do that yourself if you care to and settle in your own mind whether the average should be weighted according to population, consumers, miles of distribution system, or what.

Those readers who followed the rate study series that has been running in THE AMERICAN CITY can see the wide divergence in rate bases. But all have one factor in common—they furnish income enough to make the departments self-supporting.

As a final word, we might again point out the obvious engineering axiom—that each case deserves individual study. Water supply at Lewiston, Maine, is an entirely different proposition from that at Pittsburg, Kan. In each case the department delivers a liquid substance, free of bacteriological impurities and useful for cooking, drinking and industrial purposes, but the way they obtain it, the treatment each requires, and the distribution entailed is markedly different. To say that one does a superior job of engineering on the basis of rate charges is an error that we do not wish to have attached to this comparison.

SURFACE SUPPLY

Chlorination Only

Town	3,000 gals.	5,000 gals.	10,000 gals.
Adrian, Mich.	$0.86	$1.44	$2.88
Athol, Mass.	1.11	1.79	2.15
Augusta, Maine	0.77	1.17	2.17
Bangor, Maine	1.50	1.50	1.79
Blairsville, Pa.	0.75	0.75	1.45
Cleveland, Ohio	0.55	0.73	1.23
Corona, Calif.	1.25	1.25	2.20
Elmira, N. Y.	0.72	1.17	2.30
Kansas City, Kan.	1.00	1.67	3.33
Lawrence, Kan.	1.30	2.06	3.95
Lewiston, Maine	1.25	1.25	2.00
Louisville, Ky.	0.98	1.38	2.38
Meriden, Conn.	0.62	0.79 ave.	1.58
Menominee, Mich.	0.96	1.51	2.41
Milford, Conn. (pvt.)	1.67	2.33	4.00
Minneapolis, Minn.	0.40	0.67	1.33
Mt. Vernon, N. Y.	0.88	1.47	2.92
Oak Park, Ill.	0.83	1.37	2.72
Redlands, Calif.	1.40	1.40	1.40
Rockford, Ill.	0.86	1.44	2.88
St. Paul, Minn.	0.65	0.92	1.58
San Diego, Calif.	1.10	1.45	2.85
Stamford, Conn.	1.30	2.10	4.10
Winchester, Mass.	0.60	1.00	2.00

SURFACE SUPPLY

Treated

Town	3,000 gals.	5,000 gals.	10,000 gals.
Akron, Ohio	$1.00	$1.00	$2.00
Ann Arbor, Mich.	0.54	0.95	1.76
Atlanta, Ga.	1.00	1.00	2.39
Augusta, Ga.	0.90	1.50	3.00
Bloomington, Ill.	1.94	3.24	6.12
Cedar Rapids, Iowa	0.75	1.08	2.12
Chanute, Kan.	1.20	2.00	3.88
Corning, Iowa	1.50	2.42	4.50
Denver, Colo.	1.80	1.80	2.70
Grand Forks, N. D.	1.20	1.90	3.65
Hammond, Ind.	1.00	1.00	1.00
Highland Park, Mich.	0.38	0.55	0.98
Little Rock, Ark.	1.00	1.67	3.33
Ogdensburg, N. Y.	0.75	0.75	1.50

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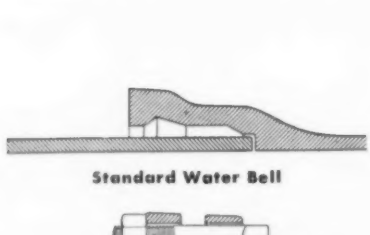

Standard Water Bell

"C-N" Mechanical Joint

Flanged Joint

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We are very grateful for the business that you have placed with us, and sincerely hope that in every case we have shown our appreciation through prompt deliveries and efficient handling of your orders.

IT WILL BE A PLEASURE to meet old friends and make new ones at our Booth, Number 55, during the American Water Works Association's Annual Conference in Milwaukee—June 13th to 16th. Also, we will be very pleased to have you visit our Chicago Plant on your way to or from the Conference—if your plans will permit you to do so.

And, now, just a word about cast iron pipe. It is available. The War Production Board will give sympathetic consideration to applications for priority rating when request is made on WPB form 2774. Let us know if we can be of service.

Ideal weather for pipe line work is here and there is no time like the present for getting that job of yours under way. Let's get together and talk it over—any time at your convenience.

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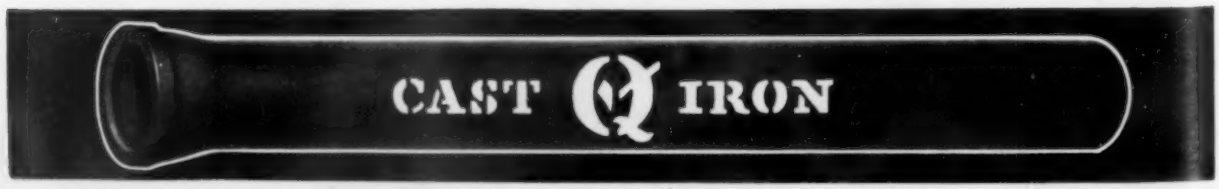


Santa Barbara, Calif.	1.00	1.00	2.00
Spartanburg, S. C.	0.67	1.26	2.52
Topeka, Kan.	0.94	1.55	2.75
Tuscaloosa, Ala.	1.37	2.00	2.83

WELL SUPPLY

No Treatment

Town	3,000 gals.	5,000 gals.	10,000 gals.
Alhambra, Calif.	$0.50	$0.83	$1.66
Dodge City, Kan.	1.50	1.75	3.00
East Moline, Ill.	0.75	1.25	2.50
Farmingham, Mass.	0.80	1.33	0.80
Jacksonville, Fla.	1.00	1.00	1.13
Lakeland, Fla.	1.05	1.84	2.18
Mason City, Iowa	1.01	1.68	3.36
New Castle, Ind.	0.60	0.64	1.17
Plant City, Fla.	1.25	1.75	3.00
Pomona, Calif.	1.00	1.00	1.33
Riverside, Ill.	1.01	1.69	3.37
San Antonio, Texas	0.65	0.73	1.24
Waltham, Mass.	0.88	1.54	2.86

WELL SUPPLY

Treatment

Town	3,000 gals.	5,000 gals.	10,000 gals.
Amesbury, Mass.	$0.72	$1.20	$2.40
Blytheville, Ark.	1.50	2.00	3.25
Ft. Dodge, Iowa	0.81	1.28	2.40
Lincoln, Nebr.	0.50	0.52	0.92
Niles, Mich.	0.85	1.14	1.88
Pittsburg, Kan.	1.05	1.75	3.50
Washington, N. C.	1.00	1.67	2.16

New York Opens New Asphalt Plant

ON the morning of May 24, the Borough of Manhattan opened for use its new asphalt plant around which has centered so much discussion as to its architectural beauty or lack of it. During the dedicatory cermonies Mayor LaGuardia stated that tastes in beauty vary widely and if this were not so all the gentlemen would want the same girl. He pointed out that the important thing about the design is the fact that it houses the machinery, in such a way as to make the layout the last word in plant efficiency embodying every possible means of labor saving in the line of available modern machinery and plant design.

While New York City's Park Commissioner Robert Moses cites the asphalt plant as an example of "horrible modernistic stuff" and asks of it "What could be worse?", the Museum of Modern Art lists it among 47 new structures throughout the nation deemed "outstanding examples of good design." The mixing building is of arched concrete construction and the design of the whole plant is severly simple yet represents, according to the Muesum, "the most efficient structural form" possible.

Borough Praise

Edgar J. Nathan, Jr., President of the Borough of Manhattan, praised the work of the architects and civil service staff who designed and supervised the construction of the plant.

The use of gravity feed wherever possible as a means of conveying the materials through the plant operations and into the truck to be transported at once to the scene of some road construction is one of the outstanding features of this structure.

The architects, Ely Jacques Kahn and Robert Allan Jacobs, planned especially to embody features of design which would attract residential development in the neighborhood and would eliminate any nuisance from dust, noise, odor or other causes. The plans were shown to property owners in the surrounding areas and as a result property owners, confident that the plant would in no way detract from the desirability of this section as a residential neighborhood, proceeded to erect housing units. The section is now residential and the plant, according to the Modern Museum, "is a distinct asset to its neighborhood."

Plant Products

The plant will produce the binder and wearing surface used in city street construction. The binder consists of small stones and sand cemented together with liquid asphalt. The wearing surface consists of finely graded sand and a pulverized limestone filler also cemented together with asphalt.

The location of the new plant on the waterfront at the site of the old asphalt plant which served the city from 1914 to 1941 is particularly advantageous from the point of view of accessibility of river transport and reception of construction materials.

Not One Ounce from War

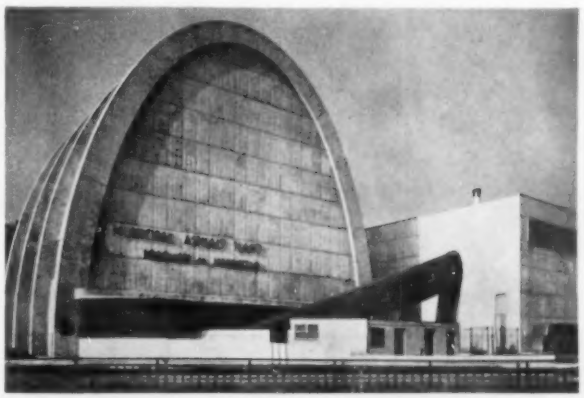
It was pointed out by Walter D. Binger, Commissioner of Borough Works of Manhattan, that the construction of the plant proceeded at full pace when the War Production Board released materials not needed for war essential projects, and stopped when construction materials were not available. He further stated that not one ounce of material went into the construction that was needed to further the war effort and when the plant was 93 percent complete its construction had to be discontinued for several months until electrical wiring materials became available.

War-Essential Streets

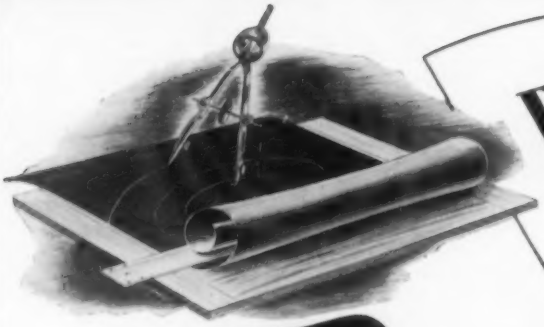
Because, as the Mayor affirmed, many activities essential to the war effort but not now publicized depend upon the excellent condition of the streets of Manhattan, the maintenance of an adequate street system is essential at this time. Not only is this true, but asphalt which is a residue of the war-swollen petroleum industry is now available in huge quantities so that the completion of the asphalt plant dovetails nicely into the war effort, according to Mr. Binger.

The plant consists of 3 buildings, one housing the oil storage tank; one is the drying and mixing plant, and the third unit provides storage for the aggregate.

Look for an article explaining the operation of this plant in a subsequent issue of THE AMERICAN CITY.



The semi-elliptical building to the front is for drying and mixing. At the extreme right is the building housing the storage bins. A third structure, not shown, is to the rear of the mixing building and houses the storage tank for fuel oil.



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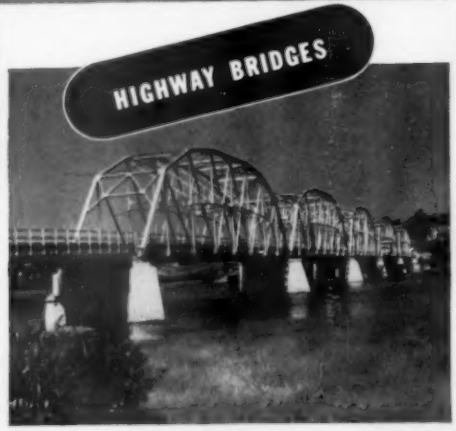

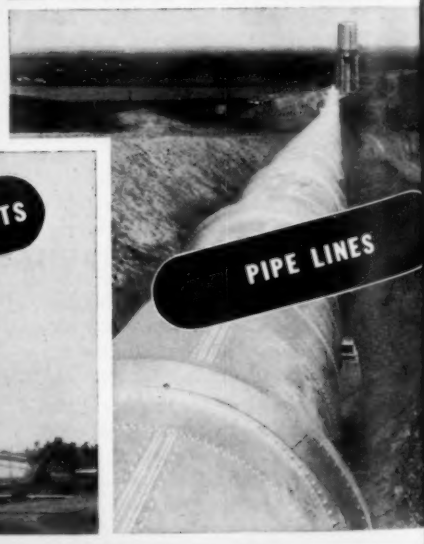

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The Human Side of City Hall

Getting Projects off the Public-Works Shelf

By PHILLIPS BRADLEY

MOST of our City Halls, big and little, have made more or less complete plans for a great variety of post-war improvements. Some time ago, there was much talk about a "shelf" of public-works projects—as a backlog of at least temporary employment during the transition period. A number of states have enacted laws to aid municipalities directly or indirectly to complete blueprints for the most essential civic improvements and to establish cash reserves toward financing their construction. Many City Halls—as frequent reports in THE AMERICAN CITY indicate—have already developed effective programs looking toward an orderly scheduling of an integrated post-war public-works plan.

What are the prospects for turning these blueprints into completed projects? What can our City Halls do to advance the practical achievement of their programs? Answers to these questions are becoming more urgent as the end of the war comes more clearly in sight. Already, war-production schedules are tapering off and employment opportunities are beginning to decline in more than one major industry.

Will the Federal Government Finance Present Programs?

One of the most popular formulas for getting these post-war projects off the shelf is federal financing. The federal grant-in-aid device, whether on a 50-50 or any other ratio, would certainly expedite as well as facilitate putting blueprints into production. Many individual cities as well as leagues of municipalities have gone on record in favor of larger federal grants to local governments after the war. A good many City Halls are apparently so sanguine about receiving generous federal aid that they are doing little to plan for the opposite—and very likely—absence of federal aid.

Some federal aid for developing post-war public-works programs will undoubtedly be available. The amount of such aid and the ratio that City Halls will be required to contribute to the total cost of projects, are very uncertain, however. And there is every reason for our municipalities to begin developing to the fullest possible extent their own resources to meet their post-war needs.

What Can Be Done?

Some states have enacted legislation allowing their local governments to establish "reserves" for post-war construction—from various specific or from general taxes. A good many cities and towns all over the country are experiencing greater or smaller "booms" in tax receipts, from increased business values, new construction, and improved capacity to pay. Although the opposite is true in some localities, the net gain for the country as a whole represents a substantial sum. Where wartime tax windfalls of any kind are available, they should certainly be salted away for the post-war period of probable declining tax revenues. It is true, of course, that increased wartime receipts reflect increased demands on City Hall's services—and must be used, often up to or above 100 percent—to provide those services to a growing population. Not every municipality will be able to save significant amounts from increased revenues; where it can be done, it should be!

Beyond this coincidental resource for post-war needs, what else can we do to place our local governments on a sounder fiscal base to meet those needs? The question raises issues quite outside the immediate problem of post-war public-works construction. They are, however, issues which must be met—sooner rather than later, if local self-government is to survive as the taproot of democracy in America. It is not less true today than when Tocqueville wrote 109 years ago that the surest guarantee of democratic government lies in the active participation of the citizen in the affairs of his municipality. The heart of the problem of getting blueprints off the shelf lies in making municipal government more effective—because it is more efficient for the job.

Blueprinting Reorganization of Local Government

A number of fiscal problems loom in the post-war period; they cannot be obviated by ignoring them. The most important is a cooperative (rather than an antagonistic) reconsideration of the entire tax structure of national, state, and local governments. Federal tax resources have steadily grown as the sources of tax receipts have been steadily acquired, often at the expense of state and local revenues.

A few of the current controversies in inter-governmental tax relations will illustrate the need for action *now* to meet post-war problems. In those areas of taxation in which uniform rates and administration produce both larger receipts and a more equitable distribution of the tax burden, federal (or state) collection may very well prove more efficient. A more candid and cooperative sharing of receipts should accompany every centralization of tax collection. Equalization of services between localities and states has been a consistent trend in state and federal tax policy for a long time. When taxes are centralized, redistribution must—and should, as in the past—take account of differential tax ability. The process must not, however, become so "regressive" toward the richer communities as to preclude their own development.

These are only a sample of the many questions in the field of local finance which will confront us when the war is over.* Beyond fiscal are other administrative problems: governmental reorganization; consolidation of local political areas; administrative efficiency; reallocation of functions between the three levels of government. Adequate blueprinting is just as important in these fields as in the planning of public-works programs. We have more time now to think them through, to get together to plan for their solution, to provide the techniques for implementing the plans, than we shall have when the armistice whistles blow. They are of the essence of a revival of effective local self-government in the America of tomorrow. And the degree to which we resolve the issues of local finance and administration which confront us today will determine the number of post-war public-works projects we get off the shelf tomorrow.

* A significant contribution to clear thinking on these and other problems is, *State and Local Finance in the National Economy*, by Alvin H. Hansen and Harvey S. Perloff (see page 143 of this issue).

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1-FILL BAG TO LINE WITH SEA WATER
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Planning Memorial Community Buildings

Building a united and constructive community spirit must be America's No. 1 effort toward implementing Victory. Here is one way to do it.

AFTER World War I many communities chose the living memorial to commemorate those who had given their lives in that conflict. Playgrounds, parks, community forests, community buildings, auditoriums, libraries, schools, and other types of service structures were built and are still effectively serving community needs and memoralizing the past.

There will be new memorials in the near future to men and women serving in this war. Many groups are working actively, as has THE AMERICAN CITY for almost a quarter of a century, to further the idea of living memorials. A 1944 publication by the National Recreational Association, *Community Recreation Buildings as War Memorials,* is a timely contribution.

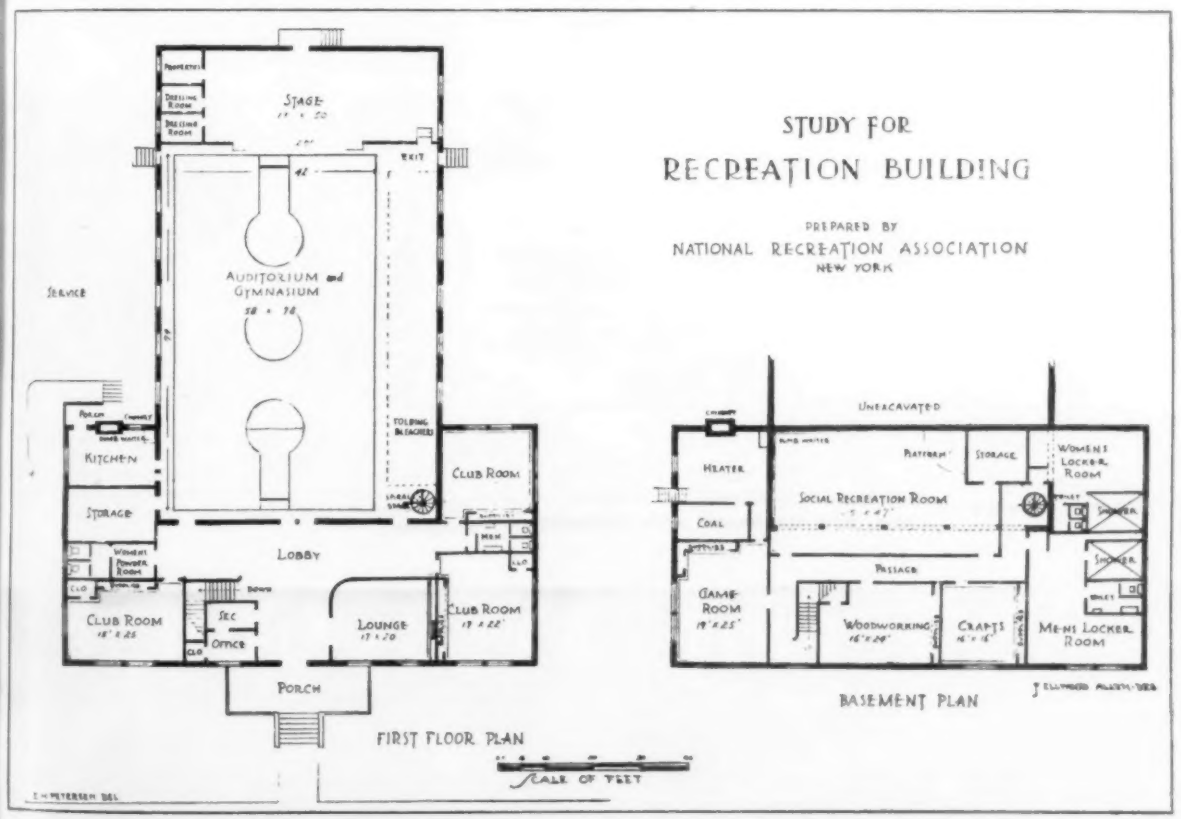
On the subject of Planning Memorial Community Buildings—one of several topics considered in the pamphlet—the Association says in part:

Beauty through simplicity of design and utility through functional efficiency are the two chief objectives in planning a memorial community building. The site should be as near as possible to the center of the city or neighborhood the building is to serve. It should also be sufficiently large to provide an adequate and appropriate setting for the building.

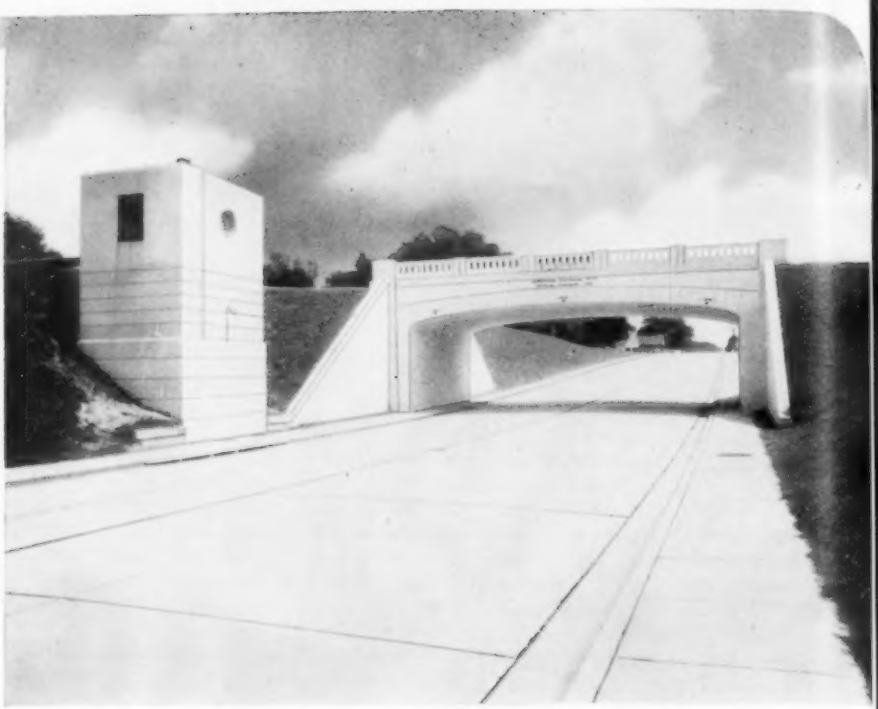
A memorial building which has dignity, simplicity and good taste helps maintain or establish a high architectural standard for the community. The interior should be planned to provide an attractive, hospitable center where the people can enjoy the activities made possible by the building. The size, shape and arrangement of the individual rooms require careful consideration, since these factors affect the efficiency of the building and the economy of its operation, maintenance and use. The following are a few of the principles to be observed in planning a community memorial building.

Sound planning facilitates the movement of people into and within the building. This is achieved through the location of the building units and the provision of adequate corridor and lobby space. Units such as an auditorium that serve large numbers of people should be reached easily from the outside and require considerable lobby space. Hobby or craft rooms designed to accommodate small groups, on the other hand, can be placed farther from the entrance and can be served by narrow corridors. All rooms used for activities should be so arranged that people are not required to pass through one room in order to reach another. If stairways leading from the lobby to upstairs or downstairs rooms are placed near the entrance, less lobby space is required and interference with main floor activities is reduced. Coat rooms should be placed where people entering a building can check their wraps and move on to the activity room without retracing their steps.

Multiple use is highly desirable and is generally essential. Few building facilities, especially in small communities, can be devoted to a single purpose.



Building planned for well-balanced indoor recreation program



Tax Money Well-Spent!

The Florida State Road Department took no chances in building this highway underpass at Cottondale, where the terrain is as flat as a billiard table.

They knew in advance that there must be efficient and reliable provision for pumping out water as rapidly as it gathered from heavy rainfall.

Fairbanks-Morse engineers were called in on the problem and solved it. The result is two 8-inch Fairbanks-Morse Vertical Centrifugal Pumps, driven at 900 r.p.m. by Fairbanks-Morse 20-hp. Vertical Ball Bearing Motors.

The entire system is turned on and off automatically.

If your municipality has pumping problems now, or if you are planning for the future, why not consult with Fairbanks-Morse engineers? Write Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

Here are the two 8-inch Fairbanks-Morse Vertical Centrifugal Pumping Units that keep the Cottondale underpass free from water during the heaviest rainfalls. Unit at right also connects to auxiliary gasoline engine that assures pumping during power failure emergency.

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RAILROAD EQUIPMENT

Pumps

Most rooms must be planned for a variety of uses. The most frequent example is perhaps a combined gymnasium-auditorium, but even where a separate gymnasium is provided it is likely to be used not only for athletic activities but on occasions for dinners, dances, hobby shows and social recreation. The social hall affords such widely different activities as square dancing, choral rehearsals, lectures, bridge parties and meetings of sewing groups. Provision for multiple use is especially important in the case of small rooms used by many groups for club and committee meetings and for hobby activities. Ample convenient cupboard and storage spaces where each group using the room regularly can store its own supplies and equipment between meetings are essential. As a rule, the greater the variety of uses that are contemplated for a room, the larger the amount of space that needs to be provided for the storage of tables, chairs and other equipment.

Locating the Director's Office

Wise planning facilitates control and operation of the building. The director's office is the center of control, and if located near the main entrance so that persons can be seen as they enter or leave the building, control is simplified. The lounge is the informal center of the building and serves as the "community parlor." Hence, it should be near the main entrance. Since the lounge is the place where the director has a chance to get acquainted with visitors to the building, proximity of the office and the lounge is desirable.

It is a sound planning principle to place rooms that have related uses near one another. The kitchen, for example, should be connected directly with the large room where dinners are to be served; storage spaces should open into rooms where the stored equipment is to receive maximum use; toilet rooms for women should be near the rooms used by women's groups. There are advantages in having the dressing and locker rooms immediately adjoining the gymnasium. If they cannot be placed on the same floor, a stairway connecting them should be provided for the use of gymnasium groups. A spiral stairway affords a simple and space-saving solution.

Economy of maintenance is another planning factor. Outside entrances to the boiler room, service room and kitchen save wear and tear on other parts of the building and enable refuse to be removed easily and without disturbing the program. Reducing corridors, halls, and unused spaces to a minimum results in a comparable decrease of costs for cleaning, heating, painting, repairs and other maintenance.

The use of attractive, durable and easily cleaned construction materials is not only appropriate in a memorial building, but proves economical in the long run. This is particularly true in the case of shower, locker and toilet rooms where the selection of materials affects the amount of maintenance and the rate of depreciation. Throughout the building, construction materials and equipment should be selected with a view to the nature of the activities to be carried on in the respective units.

Remodeling Existing Buildings

Some small cities may feel that they cannot afford to construct new community buildings of adequate size to serve the community's needs. However, in such cases it may be possible to purchase and remodel as war memorials existing buildings such as abandoned schools or other public buildings, residences or private clubhouses. Existing buildings should be considered as suitable war memorials, however, only if when remodeled they will have architectural merit and meet the specific community needs the building is intended to serve. Communities in which the Federal Government has constructed recreation buildings for servicemen and war workers should make every effort to secure the use of such buildings for community purposes. It would be appropriate for such buildings to be converted into permanent memorials because of their previous use by large numbers of servicemen.

In the preparation of the plans, local leaders should be consulted since they are most aware of the community's interests and needs. If the building is to be used for community recreation activities, the advice of competent recreation authorities should also be secured. People experienced in the field of recreation and in the operation of recreation facilities can prevent many mistakes in planning by indicating how the location, size and equipment of the various features affect the problems of operating and maintaining the building.

Several suggested floor plans for community recreation buildings of various types are included in the pamphlet, "Not," the National Recreation Association says, "with the idea that any community will want to duplicate any of these plans, but because they illustrate sound principles in the functional planning of facilities."

The study closes with a valuable outline for a Community Building Survey adapted to the needs of communities wishing to construct such centers, and a Suggested Constitution for a community memorial association whose responsibility would be to guide the policies and activities of the community memorial center. The pamphlet is available from the headquarters of the National Recreation Association at 315 Fourth Ave., New York 10, N. Y. *One dollar* per copy.

Another pamphlet just issued by the National Recreation Association comes to our desk as we go to press. It is an appeal to American communities to survey some of the estates—larger homes and other properties—in their neighborhoods to ascertain their suitability for community recreation centers. The story it tells is of Oglebay Park, once a large estate, and now a center for joyous health-building living for many. See The American City, January, 1931, for an account of Oglebay Park.

Experimental City-Owned Farm

A NEW farm crop which gives promise of encouraging agricultural development and stock breeding in western Nebraska has been developed by the Alliance, Neb., demonstration irrigation and experimental farm, operated as a public service.

Experiments with the new crop, known as "safflower," began two years ago, the International City Managers' Association reports, and results this last season have justified the city's taking steps to promote growth of the crop by farmers in the area.

Oil extracted from safflower is edible, and is valuable also in the production of paints and varnishes. A residue cake from the seed makes an excellent stock food.

Alliance acquired the farm of 240 acres adjacent to the community four years ago to demonstrate irrigation methods and to conduct experiments in developing special strains of plants for seed purposes. Experiments have included water application studies and studies of grass adaptation under irrigation. Supplementary irrigation in late fall and early spring has been emphasized and, following the initial season of the farm as a municipal enterprise four years ago, a rotation or cropping sequence was established.

The farm, which has turned in a gross annual revenue of $8,000 during the last two years, is managed by a skilled farmer, a former supervisor of a Nebraska state experimental farm, with close cooperation of the county agricultural agent and city officials. Farmers and stock raisers throughout western Nebraska have watched experiments and developments on the farm with wide interest.

SIMPLEX

Permanent PITOT TUBES with MO METER

FOR ACCURATE RATE OF FLOW MEASUREMENT

FOR

LARGE MAINS

PENSTOCKS

MAIN DISTRIBUTION LINES, ETC.

In frequent instances it is found impractical to install the Venturi tube or other similar forms of primary pressure producing devices in a pipe line, because of initial cost or inability of such a device to be inserted in an existing line.

Many plants are using Simplex Type PH or Type PFA pitot rods as effective and inexpensive head producing devices, used in conjunction with a Simplex MO meter register. The Type PH Pitot Rods permit the meter instrument to respond promptly to wide instantaneous changes in flow rate. The Type PFA Pitot Rod has the impact and reference orifices combined in one tube, and is recommended for permanent use where instantaneous flow variations are not excessive.

The accuracy of the flow rate reading obtained by an installation using Simplex Pitot Rods and MO Meters is comparable in all respects with the accuracies provided by a Venturi tube.

Simplex Pitot Rods are installed in existing lines without undue interruption in plant operation, and our Sales Department will gladly provide full engineering details involved in any particular application.

SIMPLEX VALVE & METER COMPANY

6789 UPLAND STREET, PHILADELPHIA 42, PA.

War and Post-War Water Talked by N. Y. Water Men

FEATURES of the two-day spring war conference of the New York Section of the American Water Works Association in Utica, April 27-28, opened by Mayor J. Bradbury German, included a description of the Rome, N. Y., Water Supply by City Engineer G. Lyle Stillman; a timely talk on construction materials by Bayard F. Snow, Regional Engineer, Water Supply Section, Office of War Utilities, WPB; a panel discussion on post-war planning; and a lively banquet and entertainment.

The Rome project involved a 50 mg reservoir with concrete-slab floor and Gunite sides, and a 30-inch Lock-Joint Pipe main from reservoir to city. "The history of Rome was changed by this new main," said Mr. Stillman, for it brought to Rome a $15,000,000 Air Corps permanent maintenance and repair depot, and the city's population rose from 34,000 to 50,000, water consumption rising from 9 mgd in 1940 to 13.8 mgd in 1943, with July averaging 15.4 daily. Rome's water supply cost $10,965 in 1910 with revenue of $53,605; while for 1943 the operating cost was $161,535 and the revenue was $282,125. There are 109 miles of mains of which 20 miles are 6-inch or under. Treatment is with chlorine and ammonia.

Bayard F. Snow was available throughout the two-day session for any advice and assistance needed by the nearly 200 water superintendents attending. He pointed out that lumber, especially form lumber, is tight. Copper tubing is tightening again, though it may be used out of stock for services. Cast-iron and asbestos pipe are "easy" and available, as is structural steel except sheet and plates. Manpower is the narrowest bottleneck and special priority must be obtained in critical sections for jobs requiring 25 or more additional men. Transportation continues to be a determining priority factor. "Maintain your supply and distribution system, but conserve water," advised Mr. Snow. The American Water Works Association brochure on water conservation has been sent to all cities of 10,000 population up.

The program committee, under the able direction of Division Engineer Elon P. Stewart of Syracuse, had secured a strong battery of State planning specialists to lead the post-war discussion with E. T. Cranch, New Rochelle Director of Public Works, as chairman.

Holden A. Evans, Jr., Executive Secretary of the New York State Post-War Public Works Planning Commission, explained how communities can receive half of their cost of plans up to 4 percent of the construction cost estimate of a project. Theh Commission is going on the assumption that the locality must finance the project. Before this unpalatable assumption was known, 7,000 applications descended upon the then meager staff. The current record is 47 water and sewage projects approved worth $27,230,000 and 161 projects pending. The 200 members in the room were asked for a show of hands by those who had applied for placing funds, and a half a dozen hands appeared. Undoubtedly one of the brakes to post-war planning is the question: Will the state or federal government contribute money?

PHOTO, COURTESY THE UTICA PRESS

A toast to water is offered, with water, by members of the New York State Section of the American Water Works Association. LEFT TO RIGHT: *Harry B. Miles, General Manager of the Utica Bureau of Water Supply and executive chairman of arrangements; Allen H. Rogers, Garden City, new Section Chairman; N. K. Blanchard, New York, Secretary-Treasurer, A. C. Richards, Engineer, Public Works, Albany; E. T. Cranch, Director of Public Works, New Rochelle; and Holden A. Evans, Albany, Executive Secretary of the State Post-war Planning Commission.*

Big Post-War Market for Water?

Mr. Stillman had called water "the world's greatest piece of merchandise." John H. Burwell, water superintendent of Schenectady, remarked that when one of the big industries lays off three or four thousand employees, there is an immediate drop in water consumption. What will happen after the war? George J. Winslow, Executive Secretary of the Utica Chamber of Commerce, banquet speaker, pointed out that in 1940, the best pre-war year, there were 46,000,000 persons employed, 9,000,000 unemployed and the national income was 100 billion dollars. There are now 64,000,000 employed. The objective of the Committee for Economic Development is 55,000,000 employed, income 142 billion dollars. The success of this program is to the best interests of every community.

Present at the banquet was Samuel F. Newkirk, Jr., Engineer and Superintendent, Board of Water Commissioners, Elizabeth, N. J., and President of the American Water Works Association. At the first meeting of the Association, in 1881 in St. Louis, 22 men attended; present conventions draw 1,500 members, and for the Milwaukee convention June 13-16, 1,160 persons have already registered. There are now 5,133 members. Mr. Newkirk emphasized the importance of the regional groups which, aided by the national body, together constitute, energize, and give growth and vigor to the Association.

Pointers on How to Select Packing

WHEN selecting any packing for an important stuffing box, be sure that, even when dry, it does not have a tendency to cut. In the "old days" packings were made tight in order to prevent leakage, and in many instances they are still being made too tight. As a result the power loss—even for small packed stuffing boxes—commonly amounts to one-half of one hp and even more. Operating the machine under such adverse conditions can therefore easily cost $5 and $10 in a few months for power alone on account of the extra fuel required; and then at the end of that time the operator may find that he must either have his shaft or rod turned down smoothly again, which will cost several more dollars, or he will be obliged to buy a new shaft or rod.

Poor packings are expensive. Don't use them.

W. F. SCHAPHORST, M.E.

PROMPT DELIVERY ON YOUR ORDERS FOR UNIVERSAL CAST IRON PIPE

Having completed numerous contracts for government projects throughout the country we are now in position to make prompt delivery on proper priorities, from our foundries and warehouses located from coast to coast. UNIVERSAL CAST IRON PIPE is a quick and easy-to-lay bolted-joint pipe with the following time and labor saving advantages:

1. No calking or pouring of lead or lead substitutes. No gaskets used.
2. No bell holes to dig. Can be laid in a narrow trench. Cost of wide trenching is eliminated.
3. Can be laid with SPEED. Easier and cheaper to install because only two bolts need to be inserted in the lugs and tightened with a ratchet wrench (the only tool needed) and the completed joint is made in a few minutes. Experienced workmen are not needed.
4. Nothing to deteriorate; nothing to work loose! no leakage, no maintenance cost.
5. Flexibility: Universal Pipe is very flexible. It withstands expansion, contraction, unequal settlement, vibration and shock, and electrolysis. Many curves are laid with straight lengths and do not need special fittings.
6. Universal Pipe can be laid on rocky soil, under water and in sub-zero weather.

Specify UNIVERSAL PIPE for water mains and sewers.

Furnished in hot tar dipped, cement lined, and enameline lining.

Our Universal Sales Department will be glad to furnish catalogs and any information that you may require to help you plan your waterworks system using Universal Cast Iron Pipe.

THE CENTRAL FOUNDRY CO.

386 Fourth Avenue **New York 16, N. Y.**

Town Control of Billboards

Springfield, Vermont, shows the way

By HORACE BROWN
Chairman, Vermont Association for Billboard Control

METHODS for state control of billboards have been widely discussed for the last twenty years, but comparatively little has been said of the possibility of billboard control by the towns. The town of Springfield, in Vermont, now points the way.

In the late winter of 1943 the Vermont Supreme Court in a unanimous decision declared the Vermont billboard law entirely constitutional. (Kelbro, Inc. v. Myrick, as Secretary of State, et al., 30 Atlantic Reporter (2d), p. 527.) But the Court went much further than the mere decision. It advanced the opinion that commercial billboards have no inherent right to use our highways for advertising purposes.

Uses Public Thoroughfare

Pointing out that billboards are a use not of private property but of the public thoroughfare,* the Court declared that if a state or a municipality should enact a law restricting, *or even forbidding*, commercial highway advertising, neither the property owner nor the billboard owner would be deprived of any constitutional rights. In other words, the billboards along our highways are standing not by right but by sufferance.

The above opinion gives a new angle to the whole business of billboard restriction. In Vermont it gives complete local option to cities, towns, and villages. They may enact their own laws for the protection of their roadsides and streets from disfiguring commercial advertising. They may not, however, restrict the owner of property from advertising its sale or rental or from advertising products manufactured or sold on the premises.

Town Meeting Takes Action

With the thought of establishing a precedent which other towns or municipalities might follow, with perhaps some modification, the town of Springfield, Vermont, at town meeting, March 7, 1944, by a unanimous vote passed the following measure:

"To prohibit all advertising signs having an area of over forty square feet. This shall not affect business signs on property which pertain exclusively to the property itself, its sale, its rental of business conducted thereon."

At one time the town of Springfield had seven large poster boards each measuring 300 square feet, all in scenic locations. The removal of these was achieved by means of a constant stream of protesting letters sent to the business firms advertising on these boards. These letters were such a source of annoyance to the billboard people that for their own protection they for months left the boards bare and later removed them.

The measure passed at town meeting will prevent the erection of any more big billboards in the town. The Vermont state law may tend to chase the billboards into the villages and cities where the drastic setback does not apply. The villages and cities can now chase them out. Any large billboards now standing would soon disappear, as the state would not grant the necessary annual permit to any sign erected contrary to local ordinance.

Springfield's Control Influential

The Vermont Association for Billboard Control (affiliated with the National Roadside Council) was responsible for the Vermont law for state control of billboards, and will now see that the opportunity for Town control, as demonstrated in Springfield, is made known to the selectmen and residents of many Vermont towns. It is expected that many towns which are located on main arteries of travel and which have seen these highways disfigured by roadside billboards, will now follow the precedent established by Springfield and, adhering to the principles of local option, will take similar action.

Planning Merged with Responsibility

HOW democratic planning of unified development through a government-inspired project is increasing greatly the amount of free enterprise and advancing the general welfare in a vast region, is convincingly told in "TVA—Democracy on the March" by David E. Lilienthal, Chairman, Tennessee Valley Authority.*

Unified development, as Mr. Lilienthal describes the idea in action is, in substance, TVA's synonym for *planning*. Here are significant excerpts:

"The idea of unified resource development is based upon the premise that by democratic planning the individual's interest, the interest of private undertakings, can increasingly be made one with the interest of all of us, i.e., the community interest. By and large, things are working out that way in the Tennessee Valley. The income of the private business of farming has increased, largely as a result of a program of aiding the region's soil. Sales by private fertilizer companies have increased more rapidly than at any other time in their history as a result of TVA's production and the demonstration of new fertilizer products designed to further the over-all public interest in the land. Promotion of education in forest-fire protection and scientific cutting methods has furthered conservation and at the same time aided the private business of lumbering. Community planning has made towns more attractive and pleasant for everyone, and at the same time increased land values for individual owners. These results and many others I have described have been in the general public interest; all have furthered the interest of particular business enterprises.

"Effective planners must understand and believe in people. The average man is constantly in the mind of the effective planning expert. Planners, whether they are technicians or administrators, must recognize that they are not dealing with philosophical abstractions, or mere statistics or engineering data or legal principles, and that planning is not an end in itself.

"In the last analysis, in democratic planning it is human beings we are concerned with. Unless plans show an understanding and recognition of the aspirations of men and women, they will fail. . . .

"In the TVA the merging of planning and responsibility for the carrying out of those plans forces our technicians to make them a part of the main stream of living in the region or community; this it is that breathes into plans the breath of life. For in the Tennessee Valley the expert cannot escape from the consequences of his planning, as he can and usually does where it is divorced from execution. This has a profound effect on the experts themselves. Where planning is conceived of in this way, the necessity that experts should be close to the problems with which they are dealing is evident.

"In my opinion the idea of planning is still struggling for popular support in America largely for this reason: that the most spectacular plans have been drawn by men who did not have the responsibility for carrying them out. They did not have the salutary discipline which the experts of this valley had who have had to ask themselves: "Is this a plan that I can take responsibility for seeing carried out? Will the people understand it, will the people help to make it effective? Will they make the plan their own? . . .

"Here is the life principle of democratic planning—an awakening in the whole people of a sense of this common moral purpose. Not one goal, but a direction. Not one plan, once and for all, but the conscious selection by the people of successive plans."

* See May issue, THE AMERICAN CITY, p. 119.

Many municipalities throughout the country are now making post-war plans for improvements or additions in their water systems. STREAMLINE copper pipe connected with STREAMLINE solder type fittings provides the most practical installation for water service lines . . . for all general plumbing and heating purposes, and for many applications in filtration plants.

Used together, STREAMLINE copper pipe and STREAMLINE solder fittings are an unbeatable pair.

STREAMLINE copper pipe when assembled in the STREAMLINE fitting rests upon an internal shoulder of practically the same height as the thickness of the pipe wall, thus forming a continuously smooth waterway which offers no anchorage points for the building up of foreign matter in the water.

VIBRATION PROOF

STREAMLINE copper pipe connected with STREAMLINE solder fittings is free from the harmful effects of vibration. Vibration is not localized at the joints as it is with threaded or flared fittings, but is harmlessly dissipated throughout the service line.

SETTLEMENT AND FROST ACTION

STREAMLINE copper service pipe is so ductile that it will stretch enough to easily take care of any settlement of filled earth, or, in fact, anything that might impose a strain on the service line which would cause failure of rigid ferrous pipe or, at the very least, cause leakage at the threaded connections.

In the Northern States and in the Dominion of Canada, copper service pipe of our manufacture has an outstanding advantage that places it far in advance of any other service material. This advantage is its resistance to frost action. This service pipe containing water under almost any range of pressure used in water service work can be alternately frozen and thawed out for a considerable number of times without showing any effect except a slight increase in diameter.

INVESTMENT INSURANCE

STREAMLINE copper pipe and fittings are at present being used 100% for war purposes in naval craft of practically all kinds, but it is not too early to plan again for their peacetime use. Waterworks officials who are responsible for the return on a heavy capital investment will find STREAMLINE materials one of the lowest cost forms of insurance that they can adopt.

STREAMLINE
PIPE AND FITTINGS DIVISION
MUELLER BRASS CO.
PORT HURON, MICHIGAN

Wartime Water Rates--X

This month's tabulation of rates, covering cities from the eastern seaboard to the Rocky Mountains in the west, represent reductions of from 5 to 30 percent. Lincoln, Neb., shows the greatest reduction among those previously recorded in THE AMERICAN CITY.

Mount Vernon, N. Y.

Rates:

For water used through ⅝" meters, a minimum quarterly charge of $2.20, instead of $2.60 is made for which amount 1,000 cu. ft. of water is allowed.

For water used in excess of the quarterly allowance of 1,000 cu. ft. water actually consumed is charged for as follows:

First 50,000 cubic feet used quarterly, 22c per 100 cubic feet, instead of 26c per 100, as formerly charged.

Next 50,000 cubic feet used quarterly, 18c per 100 cubic feet, instead of 20c per 100, as formerly charged.

All over 100,000 cubic feet used quarterly, 15c per 100 cubic feet, as formerly charged.

The city of Mount Vernon pays nothing to its Board of Water Supply for fire hydrant rentals. Private fire hydrants are charged at the rate of $65.00 per year.

Water supplied for automatic sprinkler systems which have no inside hose connections is charged at 10c per sprinkler head per year. Where there are inside hose openings in connction with the sprinkler system, a fire service meter must be installed and the following minimum rates are charged:

3" fire service meter	$40.00 per year
4" " " "	80.00 " "
6" " " "	160.00 " "

The Water Department makes the taps on the street mains, and its charge, therefore, payable in advance, depends upon the size of the taps. The tapping fee includes installing the taps, furnishing one curb cock and one curb cock box. All excavating over the water mains for the purpose of making the tap must be done by the owner of the property or his agent. Premises to which water is supplied must be connected to the main by a separate service pipe laid in a straight line from the main and entering the premises at the front at a right angle to the premises. All service pipes, service cocks, stop cocks, valves and other fixtures beyond the water main are subject to the approval of the Water Department and are laid at the expense of the property owner.

General Data:

Population served—67,362
Number of services—9,306
Number of water meters—metered services 9,223; unmetered fire services 83
Number of hydrants—1,038
Miles of main—99.3
Supply—Purchased from New York City—Catskill
Treatment—Chlorination only by New York City
Plant capacity—14 mgd
Average consumption—5 mgd

Consumer Costs Per Month (⅝ inch meter):

3,000 gals.	(400 cu. ft.)	$ .88
5,000 "	(667 " ")	1.47
10,000 "	(1,333 " ")	2.92

This represents a reduction of between 10 and 15 percent below the water rates that appeared previously in THE AMERICAN CITY. Rate revisions were effective July 1, 1943. All municipal buildings supplied free of charge. The department pays all its own operating costs its annual principle and interest and has a surplus which is turned over to the general fund.

ARTHUR G. JEWELL
Superintendent
Board of Water Supply

Cleveland, Ohio

Water Rates:

Minimum Charges Within City

⅝" or ¾" meter	$1.25	for	each	3	months
1" meter	2.25	"	"	"	"
1½" "	6.00	"	"	"	"
2" "	10.00	"	"	"	"
3" "	21.00	"	"	"	"
4" "	37.50	"	"	"	"
6" "	85.00	"	"	"	"
8" "	150.00	"	"	"	"

This minimum charge is collected for supplying water to each customer for the first 750 cu. ft. of water or less per quarter. All water in excess of 750 cu. ft. is billed as follows:

Meter Rates

For the first 24,500 cu. ft. for each 3 mos. in excess of 750 cu. ft. of water, 75c per 1,000 cu. ft.

For the next 225,000 cu. ft. for each 3 mos., 67.2c per 1,000 cu. ft.

For all water used in excess of 250,250 cu. ft. for each 3 mos., .576c per 1,000 cu. ft.

Minimum Charges Outside City

⅝" or ¾" meter	$1.25	for	each	3	months
1" meter	2.25	"	"	"	"
1½" "	6.00	"	"	"	"
2" "	10.00	"	"	"	"
3" "	21.00	"	"	"	"
4" "	37.50	"	"	"	"
6" "	85.00	"	"	"	"
8" "	150.00	"	"	"	"

These minimum charges are collected for supplying water to each customer for the first 375 cu. ft. of water or less per quarter. Water supplied in excess of 375 cu. ft. within the metropolitan area but outside the limits of the city of Cleveland is as follows:

Meter Rates Outside of City

(a) In low and first high-service districts:

First 24,750 cu. ft. for each 3 mos., in excess of 375 cu. ft., $1.012 for 1,000 cu. ft.

Next 225,000 cu. ft. for each 3 mos. $.836 per 1,000 cu. ft

All water used in excess of 250,125 cu. ft. for each 3 mos., $.748 per 1,000 cu. ft.

(b) In second high-service district:

First 24,750 cu. ft. for each 3 mos., in excess of 375 cu. ft., $1.584 per 1,000 cu. ft.

Next 225,000 cu. ft. for each 3 mos., $1.452 per 1,000 cu. ft.

All water used in excess of 250,125 cu. ft. for each 3 mos., $1.188 per 1,000 cu. ft.

(c) In third high-service district:

All water used in excess of 375 cu. ft. for each 3 mos., $2.112 per 1,000 cu. ft.

General Data:

Population services—1,172,000
Number of services—184,569
Number of meters—184,569 city, and suburban
Number of hydrants—17,017 city, 18,495 suburbs
Miles of water main—2,766 city, and suburbs
Supply—Lake Erie
Treatment—Rapid sand filtration
Tap water—119 ppm $CaCO_3$
Plant capacity—315 mgd
Average consumption—203 mgd

Consumer Costs Per Month:

3,000 gals.	(400 cu. ft.)	$ .53
5,000 "	(667 " ")	.73
10,000 "	(1,333 " ")	1.23

This represents about a 5 percent reduction of the rates prior to May 1, 1941. The increased average consumption has boosted our revenue thus helping us carry present war charges.

G. W. HAMLIN
Commissioner of Water and Heat

Elmira, N. Y.

Rates:

First	500 cu. ft.	30c	per 100 cu. ft.
Next	2,000 " "	25c	" " "
"	2,500 " "	20c	" " "
"	5,000 " "	15c	" " "
"	10,000 " "	7.5	" " "
"	80,000 " "	7	" " "
"	100,000 " "	6.5	" " "
"	1,000,00 " "	6	" " "
Balanced used		5.5	" " "

Bills rendered monthly where consumption exceeds 20,000 cu. ft. per month. All other bills quarterly.

All services will be metered. The minimum charge is $6.00 per annum.

HERSEY

THE HERSEY DETECTOR METER

has never been equalled for its accuracy in metering fire services. It always delivers the full capacity of the supply pipe without endangering the pressure. Accepted by Water Works officials. Approved by the National Board of Fire Underwriters.

HERSEY MANUFACTURING COMPANY
SOUTH BOSTON, MASS.

BRANCH OFFICES:
NEW YORK — PORTLAND, ORE. — PHILADELPHIA — ATLANTA — DALLAS — CHICAGO — SAN FRANCISCO — LOS ANGELES

Fifteen percent discount will be allowed if bills are paid within 10 days from date of bill. Water will be turned off if not paid in 30 days.

General Data:

Population served—65,000
Services (100 percent metered)—14,941
Number of hydrants—816
Miles of mains—164
Supply—Chemung River and Hoffman Creek
Treatment—Chlorination, coagulation, sedimentation and chloramination
Tap water—60-130 ppm $CaCO_3$, pH 7.0 to 7.4
Average consumption—6 mgd
Plant capacity—10 mgd

Consumer Costs Per Month:

3,000 gals.	(400 cu. ft.)		$ .92 (net)
5,000 "	(667 " ")		1.49
10,000 "	(1,333 " ")		2.69

This represents a 5 percent reduction below rates previously in effect published in THE AMERICAN CITY for October 1934. The reduction went into effect on June 1, 1943, and was effected by lowering the discount rate.

JOHN G. COPLEY
General Manager
Elmira Water Board

Livingston, Mont.

Rates:

First	5,000 gals.		20c per 1,000
Next	6,000 "		15c " "
"	4,000 "		10c " "
"	45,000 "		9c " "
"	190,000 "		8c " "
All over	25,0000 "		7c " "

MINIMUM MONTHLY CHARGES

Size of Meter	Gallons	Amount
⅝"	4,000	$ .80
¾"	6,000	1.15
1"	15,000	2.30
1½"	45,000	5.00
2"	105,500	10.00

Other sizes on request. No meter service charge.

General Data:

Population served—6,650
Number of services (100% metered)—1,867
Number of hydrants—156
Miles of mains—21
Supply—Yellowstone River
Treatment—Rapid sand filtration with aluminum sulfate and chlorine
Raw water—pH 7.8
Tap water—pH 7.1
Average consumption—1.4 mgd
Plant capacity—3.0 mgd

Consumer Costs Per Month:

3,000 gals.	(400 cu. ft.)		$ .80 (min.)
5,000 "	(667 " ")		1.00
10,000 "	(1,333) " ")		1.75

These rates represent about a 20 percent drop below those shown in 1935.

J. R. CORTESE
Superintendent

Endicott, N. Y.

Rates: (Quarterly basis)

		Gross	Dist.	Net
First	1,000 cu. ft. per 100 cu. ft.	20c	2.0c	18c
"	4,000 " " " " " "	18.9c	1.9c	17c
"	5,000 " " " " " "	14.5c	0.5c	14c
"	10,000 " " " " " "	12.4c	0.4c	12c
"	75,000 " " " " " "	8.65c		8.65c

Rates refer to consumers inside city limits. For those outside the first block 25c gross is charged, and 22½c net.

All connections to the street mains are made by the Water Company with the extension to the curb at no cost to the applicant.

General Data:

Population served—30,000
Number of services (100 percent metered)—5,500
Number of hydrants—395
Miles of water main—75
Supply—Deep wells
Treatment—Chlorine
Tap water—126 ppm $CaCO_3$
Average consumption—10 mgd
Plant capacity—15 mgd

Consumer Costs Per Month:

3,000 gals.	(400 cu. ft.)		$ .72
5,000 "	(667 " ")		1.17
10,000 "	(1,333 " ")		2.30

These represent a reduction of 5 percent below those published in THE AMERICAN CITY for March, 1935.

EARL J. GRIPPEN
Superintendent

Menominee, Mich.

Rates:

1,000 cu. ft.	$2.50
1,100 " "	3.00
1,200 " "	3.00
1,300 " "	3.00
1,400 " "	3.15
1,500 " "	3.23
1,600 " "	3.55
1,700 " "	3.63
1,800 " "	3.70
1,900 " "	3.78
2,000 " "	3.85
2,100 " "	4.18
2,200 " "	4.25
2,300 " "	4.33
2,400 " "	4.40
2,500 " "	4.48
2,600 " "	4.55
2,700 " "	4.63
2,800 " "	4.70
2,900 " "	4.78
3,000 " "	4.85
3,100 " "	5.43
3,200 " "	5.50
3,300 " "	5.58
3,400 " "	5.65
3,500 " "	5.73
3,600 " "	5.80
3,700 " "	5.88
3,800 " "	5.95
3,900 " "	6.03
4,000 " "	6.10

7½c for each additional 100 cu. ft.
Sewer tax: 55 percent of water charges.

RENT METER RATES

⅝"	$ .50 per quarter
¾"	.75 " "
1"	1.00 " "
1½"	2.00 " "
2"	3.00 " "

General Data:

Population served—11,000
Number of active services—2,640
Number of meters—2,610
Number of hydrants—319
Miles of water main—40
Supply—Green Bay
Treatment—Rapid sand filtration
Tap water—110 ppm $CaCO_3$, ph 7.1
Average consumption—1.0 mgd
Plant capacity—2.25 mgd

Consumer Costs Per Month:

3,000 gals.	(400 cu. ft.)		$ .96
5,000 "	(667 " ")		1.51
10,000 "	(1,333 " ")		2.41

These rates represent a reduction of more than 60 percent over those appearing in THE AMERICAN CITY for 1939.

S. J. WILLIAMS
Superintendent
Water Department

Lincoln, Neb.

Rates:

Residential Service:

First	5,000 gals.	@ 14c per 1,000 gals.	
Next	5,000 "	@ 12c " " "	
"	5,000 "	@ 10c " " "	
All over	15,000 "	@ 8c " " "	

Non-Residential Service:

First	300,000 gals.	@ 14c " " "	
Next	1,700,000 "	@ 12c " " "	
"	7,000,000 "	@ 10c " " "	
All in excess	"	@ 8c " " "	

MINIMUM CHARGES

⅝" meter	$ .50 per month
¾" "	.50 " "
1" "	.50 " "
1½" "	1.50 " "
2" "	2.50 " "
3" "	5.00 " "
4" "	10.00 " "
6" "	20.00 " "

Sprinkling or Air-Conditioning Service:

This rate available for water used for sprinkling or air-conditioning when metered through a separate meter, or, if premises supplied from a single water service line, the sprinkling or air-conditioning meter shall be connected ahead of the master meter.

All water used @ 10c per 1,000 gals.

General Data:

Population served—81,984
Services—22,329
Meters—21,925
Hydrants—1,904
Miles of main—262.77
Supply—wells
Treatment—Aeration, chlorination, rapid sand filtration
Tap water—163-205 ppm $CaCO_3$, pH 7.2
Plant capacity—23½ mgd
Average consumption—8 mgd

Consumer Costs Per Month:

Residential:

3,000 gals.	(400 cu. ft.)		$ .50 (min.)
5,000 "	(667 " ")		.70
10,000 "	(1,333 " ")		1.30

Non-Residential:

3,000 gals.	(400 cu. ft.)		$0.50 (min.)
5,000 "	(667 " ")		.70
10,000 "	(1,333 " ")		1.40

These rates represent about a 30 percent reduction below those recorded in THE MUNICIPAL INDEX for 1934. These rates were revised this year. The financial status of the Water Department is and should continue to be very good.

D. L. ERICKSON
Director and City Engineer

See page 105 of this issue for a Water Rates Comparison based on this series of Wartime Water Rates.

THE FMC *Original* Fog Fire Fighter, originated and developed by Food Machinery Corporation, produces a dense fog which extinguishes the hottest fires as if by magic! This *different* fire fighting machine, delivering 600 pounds pressure at the nozzle, is a self-contained unit one man can operate single-handed! • The remarkable engineering skill and manufacturing resourcefulness that builds these Fire Fighters also created and manufactures FMC "Water Buffalo" amphibious tanks—weapons now helping the Army, the Navy and Marines smash the Japs on land and sea.

At right are shown a few representative products of Food Machinery Corporation, world's leading makers of food processing and packing equipment.

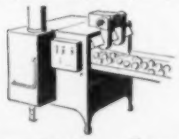
FMC Divisions *and Typical Products*

Anderson-Barngrover Division Complete line of machinery for canning foods. San Jose, Calif.

Sprague-Sells Division. . . . A complete line of machinery for canning foods. Hoopeston, Ill.

Niagara Sprayer & Chemical Co. . . . Insecticides for protecting crops from insects and disease. Middleport, N.Y.; Jacksonville, Fla.; and Burlington, Ont., Can.

Bean-Cutler Division. Sprayers, Dusters and Packing House Equipment for Fruits & Vegetables, Fog Fire Fighters, Turbine Pumps. San Jose, California.

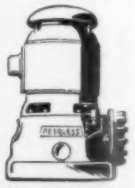


Texas Division . . . Protective Processes, Canning Machinery, Fruit and Vegetable Packing Equipment. Harlingen, Texas.

Florida Division . . . Citrus and Vegetable Packing Equipment, and Food Protective Processes. Dunedin and Lakeland, Florida.

John Bean Mfg. Co. Fog Fire Fighters, Bean Royal Spray Pumps, Automotive Service Station Equipment. Lansing, Mich.

Riverside Division. Citrus Packing Equipment, Automatic Box Making and Lidding Machinery, Fruit and Vegetable Protective Processes. Riverside, Calif.



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EXECUTIVE OFFICES: SAN JOSE, CALIFORNIA

Zoning and Planning Notes

Prepared by FRANK B. WILLIAMS
Author of *The Law of City Planning and Zoning*

Zoning Ordinance—Constitutionality—Variance Amendment

NEW YORK.—*Ulmer Park Realty Co.* v. *City of New York*, Supreme Court, Appellate Division, December 29, 1943, reported in 45 N.Y.S. (2d) page 527.

The plaintiff company is the owner of waterfront land in New York City, the greater part of which is in a residence zoning district, the rest being in a business district.

Claiming that the zoning resolution in its application to its property is confiscatory and unreasonable, and that it has no adequate remedy at law, the plaintiff has instituted this action for a judgment declaring the zoning resolution void and unconstitutional as to its property. For a separate and complete defense the city alleges that plaintiff has not asked for a change of zoning as to its property. The court rules that this is not a valid defense.

Such a change may be consummated by obtaining either an amendment or a variance. Accordingly, both methods of change will be considered.

Under the New York City Charter the City Planning Commission either originally or at the instance of a taxpayer may adopt a resolution amending the zoning resolution; but the Planning Commission's amendatory resolution is in the nature of a recommendation which is subject to the approval or disapproval of the Board of Estimate. *McCabe* v. *City of New York*, 281 N.Y. 340, 23 N.E. (2d) 529 [reported in these Notes for January, 1940]. Hence the making of any such change in the zoning resolution, while it may have its inception with the City Planning Commission as an administrative agency is, when fully consummated, a legislative function performed by the Board of Estimate.

The city contends that in order to attack the constitutionality of the zoning resolution—a legislative measure which plaintiff alleges, destroys the value of its property—plaintiff must first attempt to obtain relief by a legislative change in that act, and until it does so the present suit is premature. The courts have held, however, that such a burden may not be imposed upon a plaintiff as a prerequisite to the maintenance of an action challenging the constitutionality of a statute. The plaintiff in this case, therefore, is not required to seek an amendment of the zoning resolution. Nor need the plaintiff try to obtain a variance of the zoning resolution. The resolution itself constitutes a present invasion of his property rights.

Therefore the defense that this action is premature, is insufficient, and must be stricken out.

Parks for Negroes

NORTH CAROLINA.—*Dudley* v. *City of Charlotte*, Supreme Court, November 24, 1943, reported in 27 S.E. 2d, 732.

This is an action for an injunction restraining the Charlotte Park and Recreation Commission from maintaining a park for negroes on real estate near the homes of the plaintiffs on Harding Place. The commission has dedicated a strip of land 50 feet wide between the park and Harding Place, to be planted with trees as a screen and barrier.

The court finds that the proposed park would not be a nuisance. A public park established by lawful municipal authority cannot be a nuisance per se; nor is there any reasonable ground for anticipating that the park in this case will be so operated as to be one under the facts as found by the trial court.

In the absence of covenants in the deeds or other valid restrictions upon the use of the land for a public park, its acquisition and dedication for the purpose was a matter within the discretion of the governing authorities and may not be enjoined by the courts.

The fact that the deeds to the city and to the Park Commission do not convey unconditional title in fee does not afford ground for enjoining the completion of the transaction. The city and the Park Commission had power to acquire property for public municipal purposes by conveyance in whatever form the governing authorities deemed wise, provided there was no reasonable ground to apprehend loss or waste of public funds as a result.

The action of the city and the Park Commission in entering into certain agreements is not beyond their powers on the ground that the life of the agreements may extend beyond the terms of present members of the city's governing boards.

Residential Zoning District —Dental Office

NEW YORK.—*Stewart* v. *Barber*, Supreme Court, July 19, 1943, reported in 43 N.Y.S. (2d) p. 560.

This is an action for a permanent injunction to restrain the defendant Barber and his wife from using any part of their premises for the practice of dentistry. These premises were subject to a private agreement providing that they should be used exclusively for residential purposes.

The court grants the injunction.

In the opinion of this court, where a physician or dentist sees his patients or a lawyer meets his clients at his house in a room which would normally be called his office, he thereby destroys the character of his home as a private dwelling and it is no longer used exclusively for residential purposes.

Residential Zoning District —Garage Used to Store Commercial Vehicles

MICHIGAN.—*People* v. *Scrafano*, Supreme Court, December 20, 1943, reported in 12 N.W. (2d), page 325.

The defendant Scrafano occupied a residential building in a residential zoning district. On the same lot was his garage, which he was using for the storage of trucks used in his wholesale fruit and produce business. He does not transact any of his business at his home or at this garage.

The defendant urges that there is no reasonable relation between the attempt of the city to prevent the use of his garage for the storage of commercial vehicles and the legitimate public purpose sought to be accomplished by the zoning ordinance.

The city contends that the use made by the defendant is contrary to the true intent of the ordinance in that it is not such a use as is incidental or customary, subordinate to, or devoted exclusively to defendant's main use of the premises for residence; that the use is not one that is located on the same lot to which it is accessory and that it is a use involving a business.

The court sustains the contention of the city and holds that the defendant, in storing his commercial vehicles in his garage on the same lot as his residence, has violated the ordinance, which is constitutional as interpreted.

Invalid Zoning Ordinance

TEXAS.—*Ellis* v. *City of West University Heights*, Supreme Court, November 24, 1943, reported in 175 S. W. (2d) 396.

This is an action by the petitioner Ellis for damages caused him by the city in seeking an injunction against him for his violation of a zoning ordinance found by the court to be unreasonable and void as to him. This court denies the claim. The regulation of property by virtue of a valid zoning ordinance is not a taking of property or a damage to it for which compensation is due under our law, but an exercise of the police power for which there is no compensation. The city in attempting to enfore the ordinance exercised a lawful right. The fact that the ordinance as applied to Ellis's property was found by the court to be unreasonable and unenforceable is immaterial. The city had the right to litigate that question. While doing so it was acting purely in a governmental capacity. The rule of immunity from liability of a city in exercising government functions extends to discretionary powers and generally there is no liability for damages resulting from failure to exercise, manner of exercising or errors of judgment in exercising such discretion.

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Traffic Control and Facilitation

Conducted by Traffic Control & Facilitation Committee, Institute of Traffic Engineers, 60 John St., New York

William R. McConochie, Chairman; Donald S. Berry, Fred W. Fisch, Maxwell Halsey, Wilfred F. Irvin, Harry C. Koch, Philip S. Mancini, Claude N. Maurer, W. F. Milner, W. L. Robinson, I. S. Shattuck, George M. Webb

Parking Meters Are in 449 Cities

By DEANE DANA
Assistant Treasurer
Vehicular Parking, Ltd.
Newark, N. J.

SO many organizations are asking where parking meters are operating that we have prepared this complete list. Approximately 200,000 meters are now operating in 449 cities. They operate in 4 of the 9 cities of 500,000-1,000,000; in 14 of the 23 cities of 250,000-500,000; in 29 of the 55 cities of 100,000-250,000; in 47 of the 107 cities of 50,000-100,000; in 48 of the 213 cities of 25,000-50,000; and 79 of the 665 cities of 10,000-25,000 population.

Since August 1942, when manufacturing of meters was banned by WPB, limited stocks in the hands of the manufacturers supplied a very small part of the heavy demand for meters, received during the last two years. There is a continuous unsolicited demand for meters by cities all over the country.

Below is a list of the 449 metered cities:

Alabama: Mobile

Arizona: Phoenix

Arkansas: Fort Smith, Hot Springs, Texarkana

California: Bakersfield, Long Beach, Richmond, San Diego, Santa Ana, Vallejo, Huntington Park

Colorado: Denver

Connecticut: Bridgeport, Danbury, Hartford, Middletown, Naugatuck, New Haven, New London, Norwich, Stamford, Waterbury, Willimantic

Delaware: Wilmington

District of Columbia

Florida: Clearwater, Fort Myers, Jacksonville, Miami, Miami Beach, St. Petersburg, Tampa, West Palm Beach

Georgia: Brunswick, Columbus

Idaho: Boise, Coeur D'Alene, Lewiston, Pocatello

Illinois: Alton, Benton, Bloomington, Chicago (Park District), Clinton, Decatur, East St. Louis, Elgin, Freeport, Lincoln, Macomb, Marion, Mt. Vernon, North Chicago, Peking, Peoria, Springfield, Sterling, Waukegan

Indiana: Anderson, Elwood, Evansville, Kokomo, Lafayette, Marion, Muncie, New Albany, New Castle

Kansas: Atchison, Lawrence, Leavenworth, Parsons, Topeka

Kentucky: Ashland, Hazard, Newport, Pikesville

Louisiana: Alexandria, Shreveport

Maryland: Annapolis, Cambridge, Crisfield, Cumberland, Easton, Frederick, Frostburg, Hagerstown, Lonaconing, Salisbury, Westernport, Westminster

Massachusetts: Haverhill

Michigan: Flint, Grand Rapids, Hamtramck, Highland Park, Lansing, Midland, Monroe, Muskegon, Pontiac, Port Huron, Saginaw, Saulte Ste. Marie, Ypsilanti

Minnesota: Duluth, Minneapolis, South St. Paul

Mississippi: Gulfport, Jackson, Meridian

Missouri: Carthage, Columbia, Independence, Jefferson City, Joplin, Kansas City, Nevada, Rolla, Sedalia, Springfield

Nebraska: Grand Island, Lincoln, Omaha, Scottsbluff

New Jersey: Asbury Park, Atlantic City, Belleville, Bloomfield, Elizabeth, Hackensack, Irvington, Montclair, New Brunswick, Newark, Orange, Passaic, Paterson, Perth Amboy, South Orange, Union, Woodbury

New Mexico: Clovis

New York: Albany, Amsterdam, Auburn, Batavia, Bronxville, Buffalo, Canandaigua, Cohoes, Dunkirk, Elmira, Endicott, Fulton, Glens Falls, Hudson, Ithaca, Jamestown, Lake George, Lockport, Malone, Middletown, Mt. Vernon, New Rochelle, Nyack, Olean, Oneida, Oneonta, Oswego, Peekskill, Penn Yan, Poughkeepsie, Rennsselaer, Rochester, Rome, Saratoga Springs, Schenectady, Seneca Falls, Spring Valley, Syracuse, Troy, Utica, Watertown, Wellsville, White Plains, Yonkers

North Carolina: Charlotte, Raleigh, Wilmington

North Dakota: Fargo

Ohio: Alliance, Ashland, Bellefontaine, Cambridge, Canton, Cincinnati, Circleville, Cleveland, Columbus, Conneaut, Dayton, Lancaster, Lima, Lorain, Mansfield, Marion, Massillon, Middletown, Norwalk, Norwood, Painesville, Ravenna, Sandusky, Springfield, Toledo, Troy, Warren, Willoughby, Wilmington, Wooster, Youngstown, Zanesville, Newark

Oklahoma: Bartlesville, Enid, Lawton, McAlester, Miami, Muskogee, Norman, Oklahoma City, Ponca City, Shawnee, Tulsa

Oregon: Astoria, Eugene, Portland

Pennsylvania: Aliquippa, Barnesboro, Beaver, Bellefonte, Bellvue, Braddock, Brookville, Brownsville, Butler, Carbondale, Carlisle, Chambersburg, Charleroi, Chester, Clarion, Columbia, Connellsville, Coraopolis, Carry, Darby, Easton, East Pittsburgh, Edensburg, Etna, Everett, Franklin, Greensburg, Greenville, Grove City, Hanover, Harrisburg, Hazelton, Indiana, Irwin, Jeannette, Johnstown, Kane, Kittanning, Latrobe, Lebanon, Leighton, Lewiston, Ligonier, Lockhaven, McConnellsburg, McKeesport, Marcus Hook, Meadville, Mechanicsburg, Milton, New Castle, New Kensington, Norristown, Oil City, Olyphant, Pitcairn, Pittston, Pittsburgh, Pottstown, Punxsutawney, Ridgway, Rochester, St. Mary's, Sayre, Scottdeale, Scranton, Sewickley, Sharon, Shenandoah, Shippensburg, Somerset, State College, Stroudsburg, Swissvale, Tamaqua, Titusville, Turtle Creek, Tyrone, Uniontown, Upper Darby, Warren, Waynesboro, Wilkes-Barre, Wilkinsburg, Williamsport, Wilmerding, York

South Carolina: Columbia, Greenville, Spartansburg

Tennessee: Chattanooga, Clarksville, Elizabethton, Greeneville, Knoxville, Memphis, Morristown, Union City

Texas: Abilene, Amarillo, Austin, rownwood, Bryan, Corpus Christi, Corsicana, Dallas, Denison, El Paso, Fort Worth, Gainesville, Galveston, Houston, Kingsville, Lubbock, McAllen, McGregor, Mineral Wells, Paris, San Angelo, San Antonio, Sherman, Temple, Texarkana, Tyler, Waco, Wichita Falls

Utah: Ogden, Provo, Salt Lake City

Virginia: Alexandria, Bristol, Charlottesville, Clifton Forge, Crewe, Culpepper, Danville, Farmville, Fredericksburg, Hampton, Harrisonburg, Lexington, Lynchburg, Marion, Martinsville, Newport News, Norfolk, Petersburg, Portsmouth, Richmond, Roanoke, Staunton, Suffolk, Wytheville

Washington: Bremerton, Everett, Olympia, Port Orchard, Renton, Seattle, Spokane, Tacoma, Vancouver, Walla Walla, Yakima

West Virginia: Addison, Beckley, Bluefield, Buckhannon, Charleston, Charles Town, Clarksburg Clendenin, Elkins, Fairmont, Crafton, Hinton, Huntington, Logan, Mannington, Martinsburg, Montgomery, Morgantown, Mount Hope, Mullens, Oak Hill, Piedmont, Pt. Pleasant, Salem, S. Charlestown, Welch, Wellsburg, Weston, Whitesville, Williamson

Wisconsin: Eau Claire, Janesville, Madison

Wyoming: Casper, Cheyenne

IMPORTANT

Public Health must be maintained!

The necessity of maintaining public health in war time is self-evident. Municipal officers in charge of water purification and sewage disposal have a vital responsibility in guarding the nation's health which should not be underestimated as a contributing factor to final victory.

However, the problems of maintaining public health are *becoming increasingly difficult in the face of material shortages and transportation handicaps.* General's "Alum" will help do the job right. But to ease the situation in regard to *Aluminum Sulfate* as much as possible, won't you place your orders as far ahead as you can so that we may schedule our production on an efficient basis.

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General Chemical Aluminum Sulfate is an especially developed "Alum." High quality and constant uniformity have given it a *time-tested* reputation among water works engineers and sewage plant operators, who know its reliability through experience.

★ FOR WATER WORKS

1. Makes water crystal clear.
2. Longer filter runs are obtainable.
3. Is economical, used properly will conserve chlorine supplies . . . because it does not require oxidation to make it effective.
4. Superior in tests against other coagulants.
5. High in quality, its constant uniformity can be counted upon.

★ FOR SEWAGE PLANTS

1. Clean, easy to handle and economical to use.
2. Simple application, requires only low cost feeding apparatus and minimum attention.
3. Clear, colorless effluents are possible.
4. Precipitated sludge digests readily.
5. Treated digested sludge dries quickly, without odor.

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GENERAL CHEMICAL COMPANY

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Los Angeles • San Francisco • Seattle, Wenatchee and Yakima (Wash.)

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Buffalo Values Transit

TRANSPORTATION of the public from one part of the city to another touches the citizens of Buffalo quite as closely and as frequently as do their contacts with their local government—schools, police, fire, parks, and the rest. The operations of the International Railway Company are therefore of much public concern, both to the individual citizen and to the municipality. The 1943 annual report of this Company covers its experiences with wartime difficulties in labor and equipment, the growth of service forced upon it by increased war production, and the substantial success of the Company in meeting its problems.—Buffalo, N. Y., *Municipal Reseatrch Bureau, Inc.*

I. T. E. Signal Specifications Now an American Standard

THE design, performance, and construction specifications for pre-timed, fixed cycle, traffic signal controllers developed by the Institute of Traffic Engineers and tested in use, has been approved as an American Standard according to an announcement made today by the American Standards Association.

The standard is divided into five sections, the first of which is concerned with design, setting forth the minimum requirements for the traffic signal controllers of the various types included in the specifications. Section two deals with the functional requirements which apply specifically to non-interconnected controllers (or to controllers for isolated operation). Section three sets forth certain functional requirements which apply specifically to controllers designed for temporary operation in a non-interconnected traffic control signal system. These controllers shall also be designed for easy and inexpensive conversion to inter-connected controllers of a specified type described in section four. Section four also discussed the functional requirements which apply to the inter-connected type of controller. The fifth and last part of the standard pertains to the functional requirements which apply specifically to a Master Controller. There is also a section defining the terms used in the field.

The Institute of Traffic Engineers' Committee on Standards and Specifications which prepared the standard, was headed by William C. Brandes. The standard is a revision of the tentative ITE standard specifications for pre-timed, fixed cycle traffic signal controllers published in the 1941 *Traffic Engineering Handbook*. This standard should prove to be of especial interest to all those concerned with traffic management. It may be obtained from the American Standards Association, 29 W. 39th St., New York 18, N. Y.

Burton W. March, Director, Traffic Engineering and Safety Department, American Automobile Association, said of the menace of increasing accidents in recent months:

"There is a sobering trend in traffic accidents. The traffic death toll is on the increase again. Beginning in October 1943, there has been a greater death toll each month, for which reports have been summarized by the National Safety Council, than for the same month of the preceding year. In fact, the January toll was 30 percent above that of the year before.

"This is particularly sobering because there is nothing like a comparable increase in highway travel. There is very real danger that many officials and many of the public will have been lulled into ignoring the traffic accident threat because of the reduced figures resulting from wartime decreases in travel and wartime travel restrictions.

Good Riding Without Gasoline

ONE of the most interesting factors on the trolley coach operation is the fuel used, says the Ohio Brass Co., Mansfield, Ohio, and sometimes the least considered in checking off the various advantages this vehicle has to offer. With the tremendous generating capacity brought about by war times, the owner of electric-powered vehicles is in a very advantageous position, and a safe one so far as stable fuel costs are concerned.

No small part of this assurance of continued low power rates comes from the fact that electric power is freely available in almost any quantity, and our supply will not be required to help "feed the world" after the war is over.

Another advantage is that electric power involves no storage problem. It is "piped" right from the generator to the coach motor over any distance. Coach lighting is both improved and simplified by having ample electric power available.

Electric power, as applied to a trolley coach motor, has a very desirable characteristic. Through automatic switching in the controller, the trolley coach has an astonishing get-away. Fully loaded it can reach its running speed as quickly or more quickly than a light automobile. Power is applied so smoothly, however, that standing passengers are not thrown about in the aisles; and skidding of wheels on a wet or slippery street surface is reduced to a minimum.

Last, and among the most important advantages of electric power is its cleanliness. It involves no smoke or noxious fumes either inside the coach or outside, and is noiseless.

Coaches such as these are used for noiseless, efficient, comfortable riding in many cities.

Making Traffic Engineers

THIS is a critical year for people engaged in traffic engineering and traffic design. Accidents are going up. Fatalities totals for each of the past six months have increased over the same months a year ago. Unless we hold the line now, increases in traffic accidents, as highway travel returns to normal after the war, will be fantastic. Application of sound engineering techniques is one of the first solutions to this problem.

Plans must be made now to meet the increases in traffic volume which will come about just as fast as cars are rolled off the assembly lines. Everyone looks to elimination of pre-war parking and congestion difficulties in the urban highway of tomorrow.

These questions will be discussed at the Traffic Engineering Course of the Seventh National Institute for Wartime Traffic Training, June 19-30, 1944, at Northwestern University, Evanston, Ill. The course is under the direction of Ted Matson, with Wilbur Smith and Thomas Willier as participating instructors.

Will you please bring this to the attention of city engineers, city planners, or any other individuals who have a direct or related interest in traffic engineering? Folders are available from the National Institute for Wartime Traffic Training, 321 Tower Building, Washington 5, D. C.

HAROLD F. HAMMOND
President
Institute of Traffic Engineers

THREE STEPS TO TAKE IN PLANNING

a Brighter Future for Yourtown

TODAY you have one of the best opportunities ever presented to municipal officials to perform a great and sorely needed public service; and build lasting good will among the citizens in your community . . . by sponsoring a program of postwar street lighting modernization.

The benefits are many: protection against crime; protection against accidents; an added sense of security for your citizens; increased property values; an invaluable aid to police, firemen, and other public services; better traffic control; and a source of genuine civic pride.

The procedure is simple. First, study the needs of your community and map out the areas that are not adequately lighted. Second, determine how much additional lighting is needed (your local electric utility company will be glad to work with you, giving you the benefit of its experience and knowledge). And third, prepare a written recommendation for your citizens which outlines a progressive program of street lighting modernization to be put into effect on the day that materials and equipment become available. For free catalogs on street lighting standards, write The Union Metal Manufacturing Company, Canton 5, Ohio.

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Largest Producers of Street Lighting Standards

Outdoor Lighting

STREETS — HIGHWAYS — FLOODLIGHTING

Where's the Yardstick for Adequate Street Lighting?

IN THE daylighted city there are many outdoor municipal attractions and distractions—both animate and inanimate — such as sidewalks, curbs, pavements, bridges, parks, fountains, playfields, swimming pools, parking meters, parking lots, fire-alarm boxes, pedestrians, and police officers.

At night, without street lights, most of these realities would be invisible except for the store lights. It would be a gloomy city, and unsafe.

Yet the cheer and safety that are potential in street lighting are fully realized in very few cities and only in portions of quite a few others.

Modern traffic—which will be with us in greater force than ever after the war—has created problems which demand multiple pincers movements from all forces of law and many of engineering even in the daytime when drivers and pedestrians are eye to eye. At night, without adequate street and highway lighting, cars, taxicabs, trucks and coaches become, individually, shots in the dark and, together, a fusillade. For reasonable safety on the streets, it is necessary for our civilian panzer troops and civilian infantry to be mutually visible.

Is this first principle of night traffic safety being heeded now? Are plans being made to give adequate street light when the motorized battalions swell to full peacetime strength?

Examination of the annual reports of cities, currently being issued, and of hundreds of post-war plans, do not give too much assurance. In the rather few instances where street lighting is mentioned in annual reports, it is usually only to state its total cost to the city. Very few post-war capital programs mention a modern street-lighting installation.

Hundreds of them map new street improvements. Questioned, the city will often assert that the street or highway project includes lighting. While it is right to regard lighting as a part of any new street project, it is also important to understand street lighting quite thoroughly as an improvement to be applied to existing streets.

One of the obstacles, it is hazarded, is that the officials of an insufficient number of cities possess a trustworthy yardstick with which to measure the deficiencies in existing street lighting. As one man says: "Nobody notices good street lighting." And hardly anybody seems to notice its absence either. Probably this is because any light is better than none and because street lighting is not employed, as is interior lighting, for performing daytime work, such as reading, writing, preparing meals, operating machines, matching and judging colors.

Cities Need a Yardstick

A yardstick is needed by which city officials can know the quality of their existing street lighting and the correct installation which will provide truly adequate and not wasteful lighting. Illuminating engineers believe they have such a measure in the I. E. S. Code of Street Lighting. It is questioned whether this Code has been properly sold to the cities. What is its parentage?

What is the Illuminating Engineering Society?

What are its purposes?

Who are its members?

Who are the members of its Committee on Street Lighting?

Who are the working members who actually produce the Code of Street Lighting?

What is the purpose of the Code?

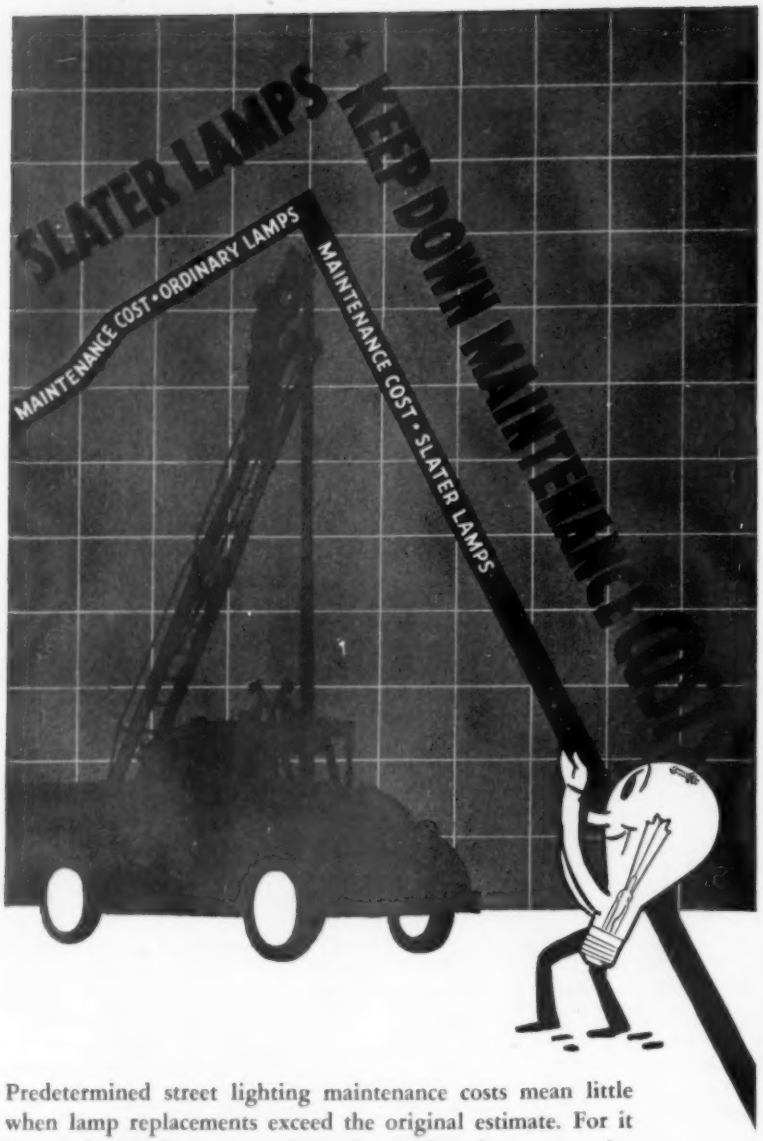
What do minimum recommendations mean?

How far below these minima are the lighting systems of most cities?

Can these minimum recommendations be reached by the installation of larger lamps in existing equipment?

Will modern equipment provide the required standards and quality of illumination without expensive increase in energy consumption?

Such questions are primary, not academic. They are the natural questions of officials who know little or nothing of the science of street illumination, yet are responsible for the expenditure of public money. Answers to these and like questions would seem to be very helpful to city engineers and officials drawing plans.



Predetermined street lighting maintenance costs mean little when lamp replacements exceed the original estimate. For it is not the small expense of the lamps, but the extra maintenance involved which results in the costly upkeep. The cost of man-hours, tire and truck depreciation, waste of precious gasoline . . . extra trips . . . all increase maintenance charges far in excess of contract prices. And lamps that fail must be replaced so as to prevent night traffic fatalities which are now costing so many lives. . . . Because SLATER LAMPS are built to the highest standards they embody every feature which assures correct lighting and *long lamp life* with resultant long-term economy. Rigid tests and inspection keep them practically free from defects. That is why, when you specify SLATER, you can be assured of dependable performance and greater light output at lower cost, under all conditions. Catalog upon request.

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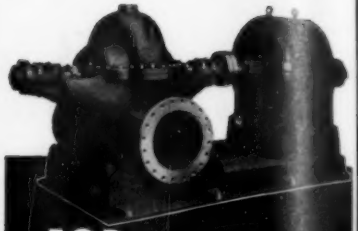

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WABASH, INDIANA

A yardstick must measure 36 inches. There must be no doubt about that. If it is permitted to be 35 inches or 37 inches, it will soon be found to be any number of inches. What is the yard that a Code of Street Lighting should measure? It is a quality or degree of visibility sufficient for safe driving at night. For instance, an average illumination of 0.2 footcandle represents visibility conditions equivalent to those of 4 or 5 full moons at zenith. This is a usual recommendation for light traffic thoroughfares, and in general the cost of this adequate quality of illumination is around 33 cents per lineal foot of street. Residence streets would be accorded less illumination than our 4 or 5 moons; medium and heavy traffic thoroughfares and business streets would be equipped for greater visibility and comfort. A complete modern system would cost on the average of 30 to 40 cents per foot per year to operate and maintain. Accepting the lower figure, let us compare normal prewar (1940-41) costs for a random list of cities, with a 30-cent-per-foot cost.

New Britain, Conn.: Looking north on Main Street after installation of enclosed pendant General Electric luminaires with 10,000 lumen lamps.

City	Actual Total	Actual Per Capita	At 30 Cents Lineal Foot Average Total	At 30 Cents Lineal Foot Average Per Capita
Indianapolis	$314,400	$.812	$1,455,696	$3.76
Des Moines	158,334	.991	594,000	3.71
Omaha	235,000	1.053	784,080	3.51
Columbus, Ga.	28,480	.535	174,240	3.26
Louisville	263,674	.826	964,656	3.02
Providence	272,372	1.074	609,840	2.40
Detroit	1,648,338	1.015	3,801,600	2.34
Cleveland	1,063,313	1.021	1,824,768	2.07
Milwaukee	579,987	.987	1,221,848	2.07
Boston	929,465	1.206	1,584,000	2.05
St. Louis	596,900	.731	1,526,976	1.87
Philadelphia	1,447,903	.750	3,326,400	1.72
Wilmington	100,957	.897	193,248	1.72
San Francisco	826,715	1.303	1,073,952	1.69
Baltimore	1,380,240	1.607	1,450,944	1.68
Newark, N. J.	394,500	.918	554,400	1.29
Chicago	3,067,353	.903	3,937,824	1.15
Jersey City, N. J.	258,001	.857	300,960	.99
New York City	6,000,000	.805	6,811,200	.91

Larger cities were selected for this tabulation because their miles of lighted streets are possibly more likely to represent the streets which actually are lighted or should be lighted than is the case with many towns of two to four thousand population reporting 10 to 25 miles of lighted streets. Possibly on some of the streets of smaller towns there are only two or three lights, and to light the entire town in accordance with the Code of Street Lighting would naturally bring a new order of annual costs. These might be warranted, in many instances, by the numerous benefits derived from adequate street lighting.

The MUNICIPAL INDEX gathered normal-year costs for 1,036 municipalities with 46,000,000 aggregate population. The per capita cost was $1. These municipalities reported a total of 76,604 miles of lighted streets. At 30 cents per foot, the total annual cost of these municipalities would be $121,334,400 and the per capita cost $2.64.

Taking some of the larger cities, as in the accompanying tabulation, the increase in cost to attain Code-of-Street Lighting quality would be only $0.60 per capita—probably nearer to the general nation-wide increase required to attain reasonably good street lighting.

Of the 1,036 cities for which statistics have been compiled, whose aggregate population numbers half the total urban population of the country, 403 of them buy complete street-lighting service from the private utility which owns the equipment and supplies the energy; 246 of them own part of their lighting equipment and buy energy; 387 of them own their equipment and generate their own energy.

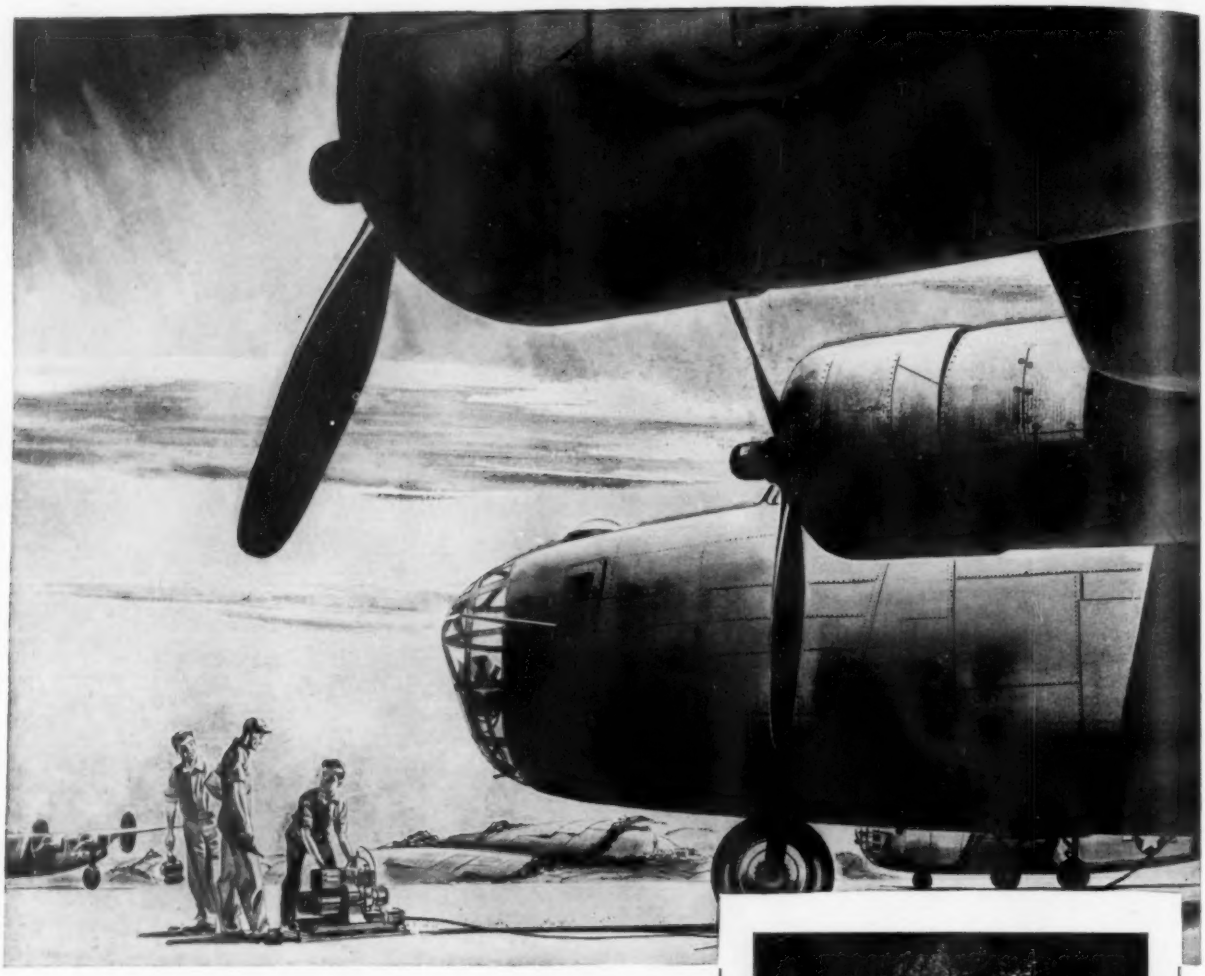
The first step to an adequate economical system of street lighting is to make a statistical survey of the existing system or ask the utility to make it. Figure the footcandles per foot along every street. Compare these figures with those recommended for each class of street by the Code of Street Lighting. Then lay out a new system in accordance with the Code's recommendations. Calculate the annual cost of the new system, including energy, maintenance and amortization. If the cost is too high, in the opinion of city and taxpayers, consult with the utility.

A great many private utilities are beginning to appreciate the street lighting load as being of fair size and comparatively little trouble where politics is non-existent. Nine out of ten utilities regard this service as a builder of good will.

See Lighting as an Asset

Street lighting has always been regarded as an additional, instead of an integral, service that had to be endured. In the beginning its purpose was to discourage crime. Its present and post-war primary function is to reduce traffic accidents. It has become not only a necessity but its adequacy in relation to traffic also is a necessity. The best way to bring about adequate street lighting universally is for all the municipalities to adopt a yardstick. This yardstick must be believed in. In the first place it must be known to exist. Its parentage and purpose must be soundly sold.

In fact, it might even be wise to start with a footrule and work up to the yardstick. If a great many cities improved their street lighting by 50 percent, that would be a considerable improvement. If in 10 years another 50 percent improvement were made, the two improvements would amount to 225 percent of the original lighting. The main thing with respect to any improvement is to get going. The cities are fortunate to have available the I. E. S. Code of Street Lighting. Have *you* a copy of it? Do you know its background? Do you have full confidence in its recommendations?



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Bombers are pretty peaceful articles resting on the ground. But up in the air they're different birds. There's fire in their eyes.

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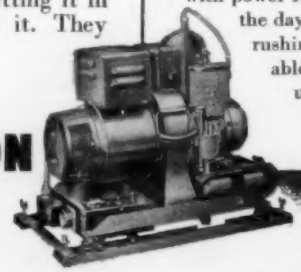

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PORT CHESTER, NEW YORK

Light Rural Highways Decrease Accident Problems

By **HAL M. BOURLAND**
Secretary, Street and Traffic Safety Lighting Bureau
155 E. 44th Street, New York

ALL 48 state highway departments and divisions of motor vehicles and registration have lined up solidly behind the American Association of State Highway Officials program and are ready to put into action plans for new road design—some of these even now out of the construction and design rooms.

Designed for the tempo of a post-war era, and linking 587 cities these plans will eventually become flight strips and cloverleaves, emphasizing traffic control and giving more attention to accident experience.

Today the automobile has moved out of the city. Rural traffic areas, at one time slow-moving enough to be considered safe, have now become arteries of commerce carrying high speed traffic; thus the traffic accident problem has extended to rural roads.

Taking rural Ohio as typical of the average state, accident figures can be judged from the report of Ohio's Chief Traffic Engineer, Harry Neal, who claims that one-half of all rural pedestrian accidents in Ohio for 1942 occurred between 6 p.m. and midnight and 75 percent between 6 p.m. and 6 a.m., the normal hours of darkness.

Then Dimouts

For traffic and illuminating engineers, conditions that were known to exist before the war were accentuated by coastal dimouts and blackouts. In a summary of experience on the Bayshore Highway in San Mateo County, Calif., just before the dimout, one traffic engineer found that properly designed lighting would reduce nighttime accidents in the order of 40 to 50 percent. Evaluating this in minimum terms of $5,000 per death and $1,000 per accident, it is clear that there is a notable economic saving possible with good lighting.

A survey of the New Jersey highway lighting program, in which the state gives financial aid to the counties, in 16 counties where modern safety lighting had been installed the fatalities for one year were reduced from 245 before lighting to 154 after adequate lighting.

The lighting of dangerous traffic intersections is a worthwhile safety measure. In Los Angeles after 25 traffic intersections were lighted, for an equal period before and after relighting, night accidents were reduced 78 percent, night personal injuries 79 percent, and night fatalities 92 per cent. (Deaths were reduced from 12 : 1).

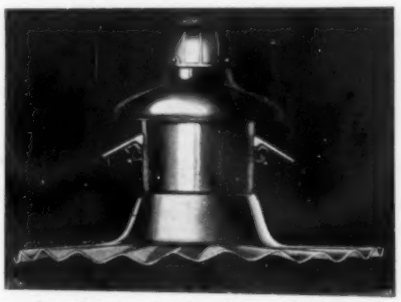
Figures prove that in 1941 adequate lighting would have saved 3,000 from death, 100,000 from injury, 450,000 cases of property damage, and $125,000,000 in economic losses. In the United States today there are 500,000 miles of designated highways. Certainly not more than 4 percent of these urgently need lighting. There are certain dangerous stretches of straight highways going through towns and villages, approaches to big cities, underpasses, bridges, cloverleaves and other intersections, traffic circles and grade crossings, all of which require special study and treatment.

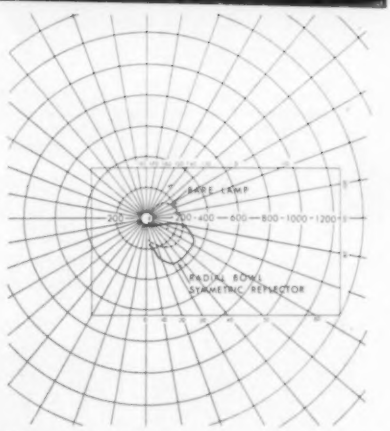
A reasonable post-war expectation will be that, when the increased revenue as a result of lighting exceeds the lighting cost for many highways there will be net cash profit, in addition to dividends accruing through conservation in life, limb, and property.

A well considered technique of highway lighting now exists. Experiments have been coordinated by highway engineers to produce a code of practice under the direction of the Illuminating Engineering Society. The code defines highways as traffic ways which have no more than four intersections per mile and little pedestrian travel.

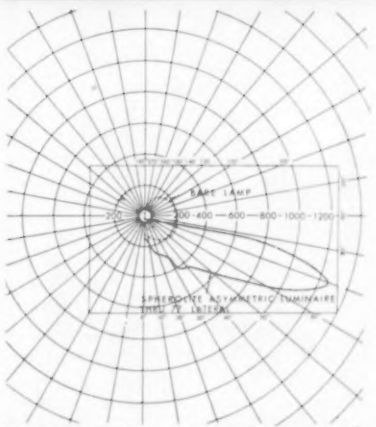
Light Conservation by Fixture Conversion

Conversion of radial reflector lamps on streets and highways to the enclosed reflector lamps spreads the light along the streets instead of bunching it directly below the luminaire. Good visibility follows approved spacing, mounting and lamping of the new enclosed pendant lamps. Simple conversion, says Line Material Co. Milwaukee, consists of releasing the radial reflector clips with a screw driver and fastening the enclosed reflector onto the existing insulator head, resulting in a complete change in the optical system.





The radial reflector gives only about 18 percent more light than does the bare lamp and throws most of the light on the street surface directly below the luminaire. Now turn to the diagram at the right showing the light distribution of the modern luminaire.



With the modern enclosed luminaire, the concentration of light in the desired 70-75 degree zone is about six times the bare lamp value, thus providing a uniformity for spacing from five to six times the mounting height.

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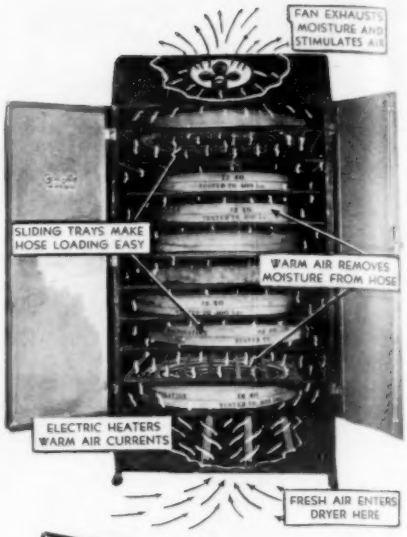
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MINNEAPOLIS TAXPAYERS ASSOCIATION — George Beetram, Manager

Civic Fund benefits as dramatized by the Minneapolis Civic Council

Municipal Law Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS, Washington, D. C.
Charles S. Rhyne, *Executive Director*

Assessments—Calculation of Fees and Carrying Charges Where Buildings of Different Heights

In an action to reduce the assessments of the City of New York on certain hotel property, held that the years 1939 through 1942 used as a guide for earnings were not ordinary years, as the World's Fair and the War made the hotel business more lucrative during that period, and that the calculation of builders' and architects' fees and carrying charges as about the same for each building was erroneous where one building was thirty stories in height, another eight, and another ten. *People ex rel. Hotel St. George Corporation* v. *Lilly*, 45 N. Y. S. (2d) 599 (N. Y. Sup. Ct. King's Co. Nov. 11, 1943).

Assessments—Judgment Against School District for Principal of Unpaid Installments Plus Interest

In action to compel Board of Education to provide in board's annual budget for funds to pay delinquent installments of street paving assessments levied against the board's property by the city, held that a judgment may be rendered against the school district for principal of unpaid annual installments of assessments levied against its property for portion of cost of public improvement plus interest due on each installment at date of its maturity, and such judgment may then be paid as other judgments are paid. *Wilson* v. *City of Hollis*, 142 Pac. (2d) 633 (Okla. Oct. 19, 1943. Reh. Den. Nov. 9, 1943).

Board of Education—Hotel as Valid Residence of Member of

Where member of Board of Education of New York representing the Borough of Queens moved into a hotel in the Borough in order to make himself eligible for appointment to such office, held that merely because he lived in a hotel did not destroy the fact that his residence was in the Borough so as to be qualified for appointment. *Wildermuth* v. *LaGuardia*, 44 N. Y. S. (2d) 284 (N. Y. Sup. Ct. Queens Co. Sept. 20, 1943).

Buses—Interstate Line—Ordinance Imposing License Fee on Invalid

Ordinance imposing annual license fee on interstate bus line passing through the city was declared invalid in a suit in the nature of a declaratory judgment, the bus line operating under permits from state and national authorities. *City of Russell* v. *Fannin*, 176 S. W. (2d) 384 (Ky. Dec. 17, 1943).

City Council—Right to Remove Mayor

A common council has the power to remove the Mayor where the City Charter is silent on the question of removal of the Mayor from office and charter and ordinances did not impose duties upon the Mayor other than the customary duties of presiding officer of the common council. *Watson* v. *Common Council of City of Marysville*, 140 Pac. (2d) 874 (Cal. App. Aug. 31, 1943).

Civil Service—Acting Librarian's Right to Higher Grade—Computation of Time

A city library employee who sought to have her service certificate indorsed for a grade higher was held not entitled to credit under the civil law for two years' service as acting librarian where continuance in such position for a period longer than four months was in violation of the law. *Application of Little*, 44 N. Y. S. (2d) 456 (N. Y. Sup. Ct. Albany Co., Oct. 25, 1943).

Crosswalks—WPA Construction—Independent Agency

City was held not liable for injuries sustained by plaintiff when she fell on a defective crosswalk which was erected by the Federal Works Progress Administration as it was constructing a storm sewer alongside the street, the work being done by an independent agency and the city having no notice of where or how the crosswalks were placed. *Brown* v. *City of Chattanooga*, 174 S. W. (2d) 466 (Tenn. Oct. 16, 1943).

Dams—Flooding of Crops—Obvious Consequence of Erection

The backing up of water by a dam constructed by the city in 1927 was held to give rise to a new cause of action where damages were sought for the flooding of land and crops in 1934, the jury having found that the injuries complained of were not the obvious consequence of the erection of the permanent public improvement. *City of Altus* v. *Fletcher*, 142 Pac. (2d) 614 (Okla. Oct. 26, 1943).

Firemen—Engaging in Private Employment While Off Duty Prohibited

Rule of fire department of City of Holyoke prohibiting department members from entering private employment while off duty was held to be reasonable so as to justify suspension of fireman because of his employment in department store in Springfield. *Bell* v. *District Court of Holyoke*, 51 N. E. (2d) 328 (Mass. Oct. 28, 1943).

Intersection—Stop Signs—Conflict with State Law

In an action for damages for personal injuries sustained when defendant's ambulance struck the car in which plaintiff was riding at an intersection, held that there was no error in admitting an ordinance of the City of Atlanta making it unlawful to disobey a stop-sign, there being no substantial conflict with the state code provision as to entering intersections. *Sweet* v. *Awtrey*, 28 S. E. (2d) 154 (Ga. App. Dec. 3, 1943. Reh. Den. Dec. 14, 1943).

Jehovah's Witnesses—Federal Jurisdiction Shown by Complaint

Where a complaint, which alleged that an ordinance requiring a license of peddlers as applied to Jehovah's Witnesses was a deprivation of freedom of religion, was dismissed by the District Court under authority of a case then standing, held that since the Supreme Court had upon rehearing vacated its prior judgment, the case should be remanded for further proceedings, there being jurisdiction to enjoin enforcement of an ordinance involving violation of civil rights. *Bradford* v. *City of Somerset, Ky.*, 138 Fed. (2d) 308 (U. S. C. C. A. 6th, October 20, 1943).

Policemen—Pension Fund—Beneficial Interest

A police officer was held not to be within statute which provided that one "beneficially interested" could maintain manadmus proceedings to compel the city to make certain payments to the police pension fund, where the officer sought to compel the city to pay into the fund the amount they would have paid in from 1930 to 1941 had the fund been set up in 1930 as required, since the officer's eligibility to such fund was a future contingency. *Davidson* v. *Council of City of Beaver Falls, Beaver County*, 34 Atl. (2d) 505 (Pa. Nov. 22, 1943).

Retirement Fund—Merger of City Into State System—Certification

Where local police pension system was merged into state retirement system and the statute provided that the fund representing accumulated contributions of members should be certified to the state, held that only that fraction of the fund which had its source in the salaries of those in service should be certified. *McNerney* v. *City of Geneva*, 49 N. E. (2d) 986 (N. Y. Ct. of App. June 18, 1943).

Schools—City May Not Sue for Supplies Furnished Children of Townships

A statute providing that the state attendance officer should enforce sections pertaining to furnishing books and supplies for children whose parents could not provide them was held to deny the School City from maintaining an action for the cost of supplies furnished children of the Union Civil Township. *State ex rel. School City of Crawfordsville* v. *Union Civil Township, Montgomery Co.*, 51 N. E. (2d) 390 (Ind. App. Nov. 19, 1943).

Schools—Regulation of Secret Fraternities

Where trustees of school district had the same authority as that conferred on county school boards and had power to make reasonable rules, it was held that regulation closing extra-curricular activities to students refusing to sign as to non-membership in secret fraternities was reasonable. *Coggins* v. *Board of Education of City of Durham*, 28 S. E. (2d) 527 (N. C. Jan. 12, 1944).

Sewers—Seepage of—No Temporary Appropriation

Where negligent maintenance of a sewer caused plaintiff's house to settle but there was no evidence of any direct encroachment of plaintiff's land by seepage, held that there was no temporary appropriation by the city which would enable plaintiff to escape the bar of the statute of limitations applicable to tort actions. *Steinle* v. *City of Cincinnati*, 52 N. E. (2d) 80 (Ohio App. March 8, 1943).

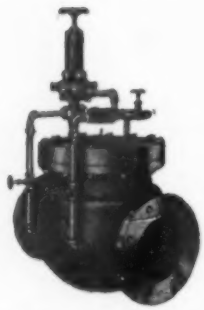
Utilities—Power of Board of Trustees to Challenge Contract

Where City of San Antonio created board of trustees to control and operate utility system, such board could not maintain suit challenging validity of contract by which city leased part of utility property to reclamation district with option to purchase. *Tuttle* v. *Guadalupe-Blanco River Authority*, 174 S. W. (2d) 580 (Tex. Oct. 27, 1943).

Water—Right of Company to Collect Rate in Excess of Operating Expenses

In action to enjoin the City of Louisville from collecting from the water company a rate more than sufficient to pay maintenance and operating expenses of the water plant, held that the water company had authority to collect water rents in excess of sum sufficient to pay operating expenses and courts could not interfere so long as rates were not unreasonable. *Dolan* v. *Louisville Water Co.*, 174 S. W. (2d) 425 (Ky. Sept. 28, 1943).

PUT PRESSURE TO WORK WITH G-A VALVES



Water Pressure Relief Valve . . . opens automatically, on excess pressure, to dissipate necessary water volume to maintain desired line pressure. Valves may be arranged to open at abnormal pressures and held open under subnormal pressures until the surge subsides. Valve is arranged either with atmospheric pilot valve exhaust or self-contained, according to service conditions and requirements. Sizes 3" to 36."

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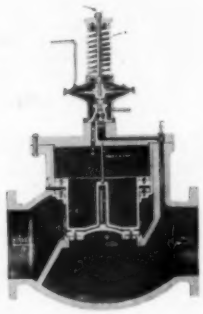
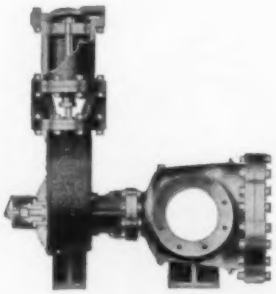
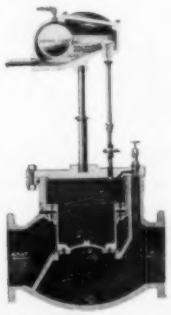


Stop Check Single Acting Altitude Valve . . . automatically maintains a uniform water level within 3" to 12" variation to prevent any tank overflow. Prevents loss or return of storage water back through the valve — makes the valve very desirable for use wherever metered water is purchased, or wherever it is imperative that there be no possible return flow. Valve may be fitted with "Differential" Control for delayed opening. Furnished in 2" to 36" sizes.

Cushioned Swing Check Valves . . . to be used on air compressor lines, water lines, etc. A swing check valve, properly designed for balanced operation to assure a full line flow with minimum pressure drop. Specially arranged cushion chamber on the side prevents slapping or banging of disc against seat on reverse flow. Furnished in globe pattern with noncorrosive trim . . . 4" to 36" sizes.



Cone Thru-Flow Valves . . . assure a full line opening without pressure drop on automatic services. In lieu of gate valves these Cone Valves can be supplied manually operated. Furnished for any automatic services such as altitude, check, relief, etc. Sizes from 4" to 72".



High Pressure Controlling Float Valve . . . particularly adaptable for water level control in heaters, reservoirs, basins, etc., under high inlet pressure where a very close water level must be maintained. Needle valve control permits regulating closing speed of the valve to suit conditions, and inherent air and water cushioning assures smooth operation at all times without shock or bang. Sizes from 3" to 36".

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Conventions—When and Where

June 15-17—Harrisburg, Pa.
EASTERN ASSOCIATION OF FIRE CHIEFS. Annual Meeting. (Hotel Penn-Harris.) Sec., Charles E. Clark, Box 217, Wayne, Pa.

June 16-17—Syracuse, N. Y.
NEW YORK STATE SEWAGE WORKS ASSOCIATION. Spring Meeting. (Hotel Syracuse.) A. S. Bedell, N. Y. State Department of Health, Albany, N. Y.

June 18-24—Greensboro, N. C.
SOUTHEASTERN INSTITUTE FOR COMMERCIAL ORGANIZATION EXECUTIVES. Annual Session. (The Woman's College of the University of North Carolina.) Mgr., L. P. Dickie, Chamber of Commerce Bldg., Atlanta, Ga.

June 19-22—Pittsburgh, Pa.
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS. Semi-annual Meeting. (Hotel William-Penn.) Exec. Asst. Sec., Ernest Hartford, 29 W. 39th St., New York 18, N. Y.

June 19-21—St. Paul, Minn.
NATIONAL ASSOCIATION OF TAX ADMINISTRATORS. Annual Meeting. (Hotel St. Paul.) Acting Exec. Sec., George H. Watson, 1313 E. 60th St., Chicago, Ill.

June 19-21—Philadelphia, Pa.
SPECIAL LIBRARIES ASSOCIATION. Annual Wartime Conference. (Hotel Benjamin Franklin.) Exec. Sec., Mrs. Kathleen B. Stebbins, 31 E. 10th St., New York 3, N. Y.

June 21-22—Marion, Ohio
OHIO CONFERENCE ON SEWAGE TREATMENT. Annual Conference. (Hotel Harding.) Sec., Don Heffelfinger, c/o Sewage Treatment Plant, Alliance, Ohio.

***June 22-24—Oshkosh, Wis.**
CENTRAL STATES SEWAGE WORKS ASSOCIATION. Joint Wartime Conference on Sanitation with Wisconsin Sewerage Works Operators. Sec.-Treas., J. C. Mackin, Route 4, Madison, Wis.

June 22-24—Philadelphia, Pa.
PENNSYLVANIA STATE ASSOCIATION OF BOROUGHS. Annual Convention. (Hotel Benjamin Franklin.) Pres., Thomas F. Chrostwaite, Hanover, Pa.

June 22-25—Fresno, Calif.
CALIFORNIA SEWAGE WORKS ASSOCIATION. Annual Convention. Pres., Richard Pomeroy, Pasadena, Calif.

June 25-July 1—Eugene, Oregon
WESTERN INSTITUTE FOR COMMERCIAL AND TRADE EXECUTIVES. Annual Meeting. (Oregon State University.) Mgr., Wm. E. Hammond, 333 Pine St., San Francisco, Calif.

***June 27-29—Moose Jaw, Sask.**
SASKATCHEWAN URBAN MUNICIPALITIES ASSOCIATION. Annual Meeting. (Canadian Legion Hall.) Sec.-Treas., W. E. Hodge, 503 Scott Block, Moose Jaw, Sask., Canada.

July 3-8—Pittsburgh, Pa.
NATIONAL EDUCATION ASSOCIATION OF THE UNITED STATES. Annual Business Meeting of the Representative Assembly. (Hotel William Penn.) Exec. Sec., Willard E. Givens, 1201 16th St., N.W., Washington, D. C.

***July 10-12—Charlevoix, Mich.**
MICHIGAN ASSOCIATION OF CHIEFS OF POLICE. War Conference. (Hotel Belvedere.) Sec.-Treas., Oscar G. Olander, c/o Michigan State Police, East Lansing, Mich.

July 19-21—Cleveland, Ohio
AMERICAN SOCIETY OF CIVIL ENGINEERS. Annual Convention. (Hotel Cleveland.) Sec., George T. Seabury, 33 West 39th St., New York 18, N. Y.

July 23-29—Missoula, Mont.
ROCKY MOUNTAIN INSTITUTE FOR COMMERCIAL ORGANIZATION EXECUTIVES. Annual Session. (Hotel Florence.) Sec.-Treas., J. R. Pratt, 1445 Rand Tower, Minneapolis, Minn.

July 23-29—Dallas, Texas
SOUTHWESTERN CHAMBER OF COMMERCE INSTITUTE. Annual Session. (Hotel Baker.) Mgr., D. Hodson Lewis, 300 Chamber of Commerce Bldg., Dallas 2, Texas.

July 24-25—Reading, Pa.
PENNSYLVANIA CHIEFS OF POLICE ASSOCIATION. War Conference. (Hotel Berkshire.) Sec., F. B. Titus, Lansdowne, Pa.

July 24-27—Syracuse, N. Y.
NATIONAL ASSOCIATION OF COUNTY OFFICIALS. Second War Conference. (Hotel Syracuse.) Sec.-Treas., George F. Simmons, Ogden, Utah.

July 25-27—White Plains, N. Y.
NEW YORK STATE ASSOCIATION OF CHIEFS OF POLICE. Annual Meeting. (Hotel Roger Smith.) Sec.-Treas., R. W. Morris, P. O. Box 346, Geneva, N. Y.

July 31-Aug. 2—Williamsport, Pa.
PENNSYLVANIA STATE ASSOCIATION OF COUNTY COMMISSIONERS. Annual Convention. (Hotel Lycoming.) Sec., D. E. Schuler, Court House, Warren, Pa.

Aug. 13-19—Evanston, Ill.
NATIONAL INSTITUTE FOR COMMERCIAL AND TRADE ORGANIZATION EXECUTIVES. Annual Session. (Northwestern University.) Sec.-Treas., Clarence R. Miles, 38 S. Dearborn St., Chicago, Ill.

Aug. 14-16—Cleveland, Ohio.
INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE. Annual Conference. (Hotel Statler.) Exec. Sec., Edward J. Kelly, 918 F St., NW, Washington, D. C.

Aug. 22-25—Grand Rapids, Mich.
INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual Convention. (Hotel Pantlind.) Sec., Daniel B. Tierney, 8 Robbins Rd., Arlington, Mass.

***Aug. 23-25—Raleigh, N. C.**
NORTH CAROLINA LEAGUE OF MUNICIPALITIES. Annual Conference. Acting Exec. Sec., Mrs. Davetta L. Steed, 704 Raleigh Bldg., Raleigh, N. C.

***Aug. 30-Sept. 1—Pittsburgh, Pa.**
NATIONAL SHADE TREE CONFERENCE. Annual Convention. (Hotel William Penn.) Sec.-Treas., L. C. Chadwick, Ohio State University, Columbus, Ohio.

Sept. 1-2—Vernal, Utah
MUNICIPAL LEAGUE OF UTAH. Annual Convention. Sec., Tom McCoy, Public Safety Bldg., Salt Lake City, Utah.

***Sept. 12-13—Bismarck, N. D.**
LEAGUE OF NORTH DAKOTA MUNICIPALITIES. Annual Convention. (Hotel Grand Pacific.) Exec. Sec., Myron H. Atkinson, City Auditor, Bismarck, N. D.

***Sept. 12-13—Bismarck, N. D.**
NORTH DAKOTA WATER AND SEWAGE WORKS CONFERENCE. Annual Convention. (Hotel Grand Pacific.) Sec.-Treas., K. C. Lauster, Bismarck, N. D.

***Sept. 12-14—Chicago, Ill.**
AMERICAN TRANSIT ASSOCIATION. Annual Business Meeting. (Hotel Stevens.) Gen. Sec., Guy C. Hecker, 292 Madison Ave., New York, N. Y.

Sept. 13-14—Pittsburgh, Pa.
AMERICAN WATER WORKS ASSOCIATION—WESTERN PENNSYLVANIA SECTION. Annual Meeting. (Hotel Roosevelt.) Sec., E. P. Johnson, 418 Flannery Bldg., Section 13, Pittsburgh 13, Pa.

***Sept. 14-16—Chicago, Ill.**
ILLUMINATING ENGINEERING SOCIETY. Annual Conference. (Edgewater Beach Hotel.) Exec. Sec., Frank G. Horton, 51 Madison Ave., New York 10, N. Y.

Sept. 17-20—Chicago, Ill.
AMERICAN CEMETERY OWNERS' ASSOCIATION. Annual Meeting. (Edgewater Beach Hotel.) Vice-Pres., Roy Hatten, 408 South Oak Park Ave., Oak Park, Ill.

***Sept. 19-20—Watertown, S. D.**
SOUTH DAKOTA WATER AND SEWAGE WORKS CONFERENCE. Annual Meeting. (Hotel Lincoln.) Sec.-Treas., Glen J. Hopkins, Dir., Division of Sanitary Engineering, State Board of Health, Pierre, S. D.

Sept. 19-21—Mammoth Cave National Park, Ky.
KENTUCKY MUNICIPAL LEAGUE. Annual Meeting. (Hotel Mammoth Cave.) Exec. Sec., Carl B. Wachs, c/o University of Kentucky, Lexington, Ky.

Sept. 19-22—Poland Spring, Maine
NEW ENGLAND WATER WORKS ASSOCIATION. Annual Meeting. (Poland Spring House.) Sec., Frank J. Gifford, 613 Statler Bldg., Boston, Mass.

Sept. 21-22—Denver, Colo.
AMERICAN WATER WORKS ASSOCIATION—ROCKY MOUNTAIN SECTION. Annual Conference. (Hotel Cosmopolitan.) Sec., O. J. Ripple, Supt. of Filtration, Littleton, Ohio.

***Sept. 24-26—Roanoke, Va.**
LEAGUE OF VIRGINIA MUNICIPALITIES. Annual Conference. (Hotel Roanoke.) Exec. Sec., Harold I. Baumes, 902 Travelers Bldg., Richmond, Va.

Sept. 24-27—St. Paul, Minn.
AMERICAN PUBLIC WORKS ASSOCIATION. Public Works Congress. (Hotel St. Paul.) Exec. Dir., Frederic Bass, 1313 E. 60th St., Chicago, Ill.

***Sept. 25-27—Indianapolis, Ind.**
AMERICAN INSTITUTE OF PARK EXECUTIVES. Annual Convention with American Park Society. Exec. Sec., Will O. Doolittle, Box 422, Rockford, Ill.

Sept. 26-28—Lake Placid, N. Y.
MUNICIPAL ELECTRIC UTILITIES ASSOCIATION OF NEW YORK STATE. Annual Meeting. (Lake Placid Club.) Sec., T. J. McKee, 200-212 East Third St., Jamestown, N. Y.

***Oct. 1-4—Chicago, Ill.**
INSTITUTE OF TRAFFIC ENGINEERS. Annual Meeting. (Hotel Sherman.) Sec.-Treas., W. Graham Cole, 60 John St., New York 7, N. Y.

Oct. 2-4—Boston, Mass.
INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION, INC. Annual Meeting. (Hotel Statler.) Sec., Irvin Shulsinger, 8 East 41st St., New York 17, N. Y.

***Oct. 2-5—Cincinnati, Ohio**
AMERICAN SOCIETY OF MECHANICAL ENGINEERS. Fall Meeting. (Hotel Netherlands Plaza.) National Sec., C. E. Davies, 29 W. 39th St., New York 18, N. Y.

***Oct. 2-5—St. Louis, Mo.**
NATIONAL ASSOCIATION OF PUBLIC SCHOOL BUSINESS OFFICIALS. Annual Convention. (Hotel Jefferson.) Sec., H. W. Cramblet, Board of Education, Pittsburgh, Pa.

Oct. 3-5—New York, N. Y.
AMERICAN PUBLIC HEALTH ASSOCIATION. Second Wartime Public Health Conference and Annual Business Meeting. Exec. Sec., Dr. Reginald W. Atwater, 1790 Broadway, New York 19, N. Y.

Oct. 3-5—Des Moines, Iowa
NATIONAL ASSOCIATION OF ASSESSING OFFICERS. National Conference on Assessment Administration. (Hotel Ft. Des Moines.) Exec. Dir., Albert W. Noonan, 1313 E. 60th St., Chicago, Ill.

Oct. 12-14—Pittsburgh, Pa.
FEDERATION OF SEWAGE WORKS ASSOCIATIONS. Annual Meeting. (Hotel William Penn.) Sec., W. H. Wisely, 325-26 Illinois Bldg., Champaign, Ill.

Oct. 12-14—Pittsburgh, Pa.
PENNSYLVANIA SEWAGE WORKS ASSOCIATION. Annual Conference. (Hotel William Penn.) Sec.-Treas., Bernard S. Bush, c/o Dept. of Public Health, Kirby Health Center, Wilkes-Barre, Pa.

Oct. 12-17—Chicago, Ill.
THE INTERNATIONAL CITY MANAGERS' ASSOCIATION. Annual Conference. (Medinah Club.) Dir., Clarence E. Ridley, 1313 E. 60th St., Chicago, Ill.

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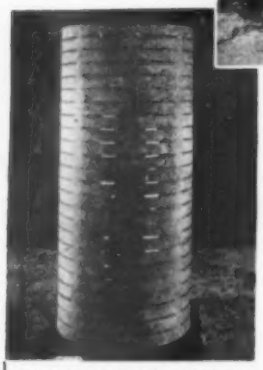

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Conventions (*Cont'd*)

*Oct. 15-18—Kansas City, Mo.

NATIONAL ASSOCIATION OF COMMERCIAL ORGANIZATION SECRETARIES. War Conference. (Hotel Muehlebach.) Exec. Sec.-Treas., Miss Elizabeth Glenn, 1615 H St., NW, Washington, D. C.

Oct. 17-19—Austin, Texas

AMERICAN WATER WORKS ASSOCIATION—SOUTHWEST SECTION. Annual Meeting. (Hotel Driskill and Stephen F. Austin.) Sec.-Treas., George J. Rohan, P.O. Dr. 449, Waco, Texas.

*Oct. 23-24—Kansas City, Mo.

AMERICAN WATER WORKS ASSOCIATION—MISSOURI VALLEY SECTION. Annual Meeting. (Hotel President.) Sec., Earle L. Waterman, Room 104, Engineering Hall, University of Iowa, Iowa City, Iowa.

*Oct. 25-27—Chicago, Ill.

THE AMERICAN MUNICIPAL ASSOCIATION. Annual Conference. (Hotel Blackstone.) Exec. Dir., Earl D. Mallery, 1313 E. 60th St., Chicago, Ill.

*Oct. 27-29—Los Angeles, Calif.

AMERICAN WATER WORKS ASSOCIATION—CALIFORNIA SECTION. Annual Meeting. (Hotel Biltmore.) Sec., H. Arthur Price, Box 3669, Terminal Annex, Los Angeles, Calif.

Oct. 30-31—Pittsburgh, Pa.

ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA. Annual Water Conference. (Hotel William Penn.) Chairman, H. M. Olson, Hotel William Penn, Pittsburgh, Pa.

*Nov. 1-3—Chicago, Ill.

CIVIL SERVICE ASSEMBLY OF THE UNITED STATES AND CANADA. Annual Conference on Public Personnel Administration. (Hotel Stevens.) Dir., James M. Mitchell, 1313 E. 60th St., Chicago, Ill.

*Nov. 2-3—Toronto, Ont.

CANADIAN INSTITUTE ON SEWAGE AND SANITATION. Annual Convention. (Royal York Hotel.) Sec.-Treas., Dr. A. E. Berry, Dept. of Health, Parliament Bldg., Toronto, Ont.

*Nov. 8-10—Philadelphia, Pa.

AMERICAN WATER WORKS ASSOCIATION—FOUR STATES SECTION. Wartime Conference. (Hotel Benjamin Franklin.) Sec.-Treas., H. Lloyd Nelson, 1624 Lincoln-Liberty Bldg., Philadelphia, Pa.

*Nov. 8-10—Philadelphia, Pa.

PENNSYLVANIA WATER WORKS OPERATORS' ASSOCIATION. Annual Conference. (Hotel Benjamin Franklin.) Sec., I. M. Glace, 22 South 22nd St., Harrisburg, Pa.

Patented Articles

(*Continued from page* 86)

ented articles may be subject to competition on the part of numerous licensees of such articles. Clearly, however, when the statute provides for competitive bidding, except where the circumstances "do not admit of competition," a contract for a patented pavement controlled by one person in the locality may be entered into without advertising for bids, whereas this would not be so in the case of the purchase of an automobile, because such an article does admit of competition. In the absence of judicial precedent or statutory dispensation, and as a matter of proper administrative practice, for the purpose of protecting the contract awarded from possible attack, the requirement for advertising for bids should be observed, for "disclosure is the antidote to partiality and favor."

The Municipal Bond Market

Some sales of new issues as reported in May issues of *The Bond Buyer*:

Amount	Borrower and Purpose	Rate (%)	Term (Years)	Basis (%)
$100,000	Meriden, Conn., Sewer Construction	.75 M&N	1-10 Ser.	0.712
100,000	Clayton, Mo., Sch. Dist., School	.75 F&A	5-33 Avg.	0.719
4,000,000	Buffalo, N. Y., Refunding	.90	4-50 Avg.	0.88
140,000	Geddes, N. Y. Union Free Sch. Dist. No. 2 (Registered)	4.50 A&O	4.50 Avg.	1.02
315,420	New York, N. Y., Rapid Transit Const., Corporate Stock (Reg.)	3.50 M&N	4.50	1.13
100,000	Scarsdale, N. Y., Union Free Sch. Dist. No. 1 (Registered)	4.25 J&J	6.25 Avg.	1.311
200,000	Lakewood, Colo., Lakewood Sanitation Dist.	1.50 J&D	11.50 Avg.	1.45
648,000	Orleans Levee Dist., La., Refunding	2.25 J&D	5-33 Avg.	1.451
125,000	Clinton, Okla., Airport	1.50 S.-A.	8.66	1.497
185,000	Erwin, N. Y., Union Free Sch. Dist. No. 1 (Registered)	4.50 M&S	5.0 Avg.	1.57
270,000	Big Spring, Tex., Water Works Extension and Improvement General Obligation	1.75 J&D	1-10 Ser.	1.6169
554,000	Memphis Housing Authority, Tenn. Series A. Refunding	4.0 M&N	3.0 Avg.	1.705
181,000	Chattanooga Housing Authority, Tenn., Series A (First Issue) Refunding	6.0 A&O	3.0 Avg.	1.7354
153,000	Catskill, N. Y., Water (Registered)	4.40 J&J	13.81	1.86
10,975,000	California Toll Bridge Authority, San Francisco — Oakland Bay Bridge Revenue Refunding	3.75 M&S	3.81	1.96613

C. L. Vickers Appointed FWA Regional Director

C. L. VICKERS has been appointed Regional Director of the Federal Works Agency, with headquarters at Richmond, Va., replacing Kenneth Markwell, who resigned to become an assistant commissioner in the Bureau of Reclamation, Department of the Interior.

Mr. Vickers has been connected with the FWA Office in Richmond since June, 1941, first as Regional Engineer and later as Assistant Regional Director.

A native of West Virginia, Mr. Vickers was in business for himself as a consulting engineer at Huntington from 1916 until 1928 when he disposed of his engineering interests to accept a position with the Cincinnati Union Terminal Co. on a $44,000,000 project. This job was completed in 1933, and he entered Government service as senior examining engineer in the West Virginia State Office of PWA at Charleston. In 1937 he was assigned to the Chicago regional office and remained until the Public Works Administration was liquidated in 1940.

Returning to West Virginia, Mr. Vickers accepted a position as Resident Engineer for the West Virginia State Road Commission, with offices in Parkersburg. He was recalled to government service in June, 1941, and was assigned to the FWA regional office at Richmond as Regional Engineer. He was in charge of the office until the following year when Mr. Markwell was appointed Regional Director and he became Assistant Regional Director.

WPB Housing

THE Office of War Utilities, War Production Board has issued a new revision of the recent Conservation Order M-9-c-4 which permitted the use of copper and copper base alloy pipe and tubing in the construction of gas and water services, is now confined to the amount required to reach from the main to the curb stop or the consumer's property line. The new revision further provides that no utility may use copper or copper base alloy pipe or tubing purchased from any person other than another utility for the construction of new utilities authorized to serve new housing.

The necessity to conserve service transformers has led also to a new provision permitting an additional 55 feet of conductor per dwelling unit where this will enable a reduction to be made in the number of transformers used.

New Building Code Standard

A new building code standard, developed under the technical leadership of the American Municipal Association and the Building Officials' Conference of America, Inc., was approved last month by the American Standards Association. The standard, "Administrative Requirements for Building Codes," defines in broad terms the powers, duties and responsibilities of the enforcing official and covers construction, alteration, repair, equipment, use and occupancy, location, maintenance, removal and demolition of all kinds of structures. Copies obtainable at 35 cents each from American Standards Association, 29 West 39th Street, New York 18, N. Y.

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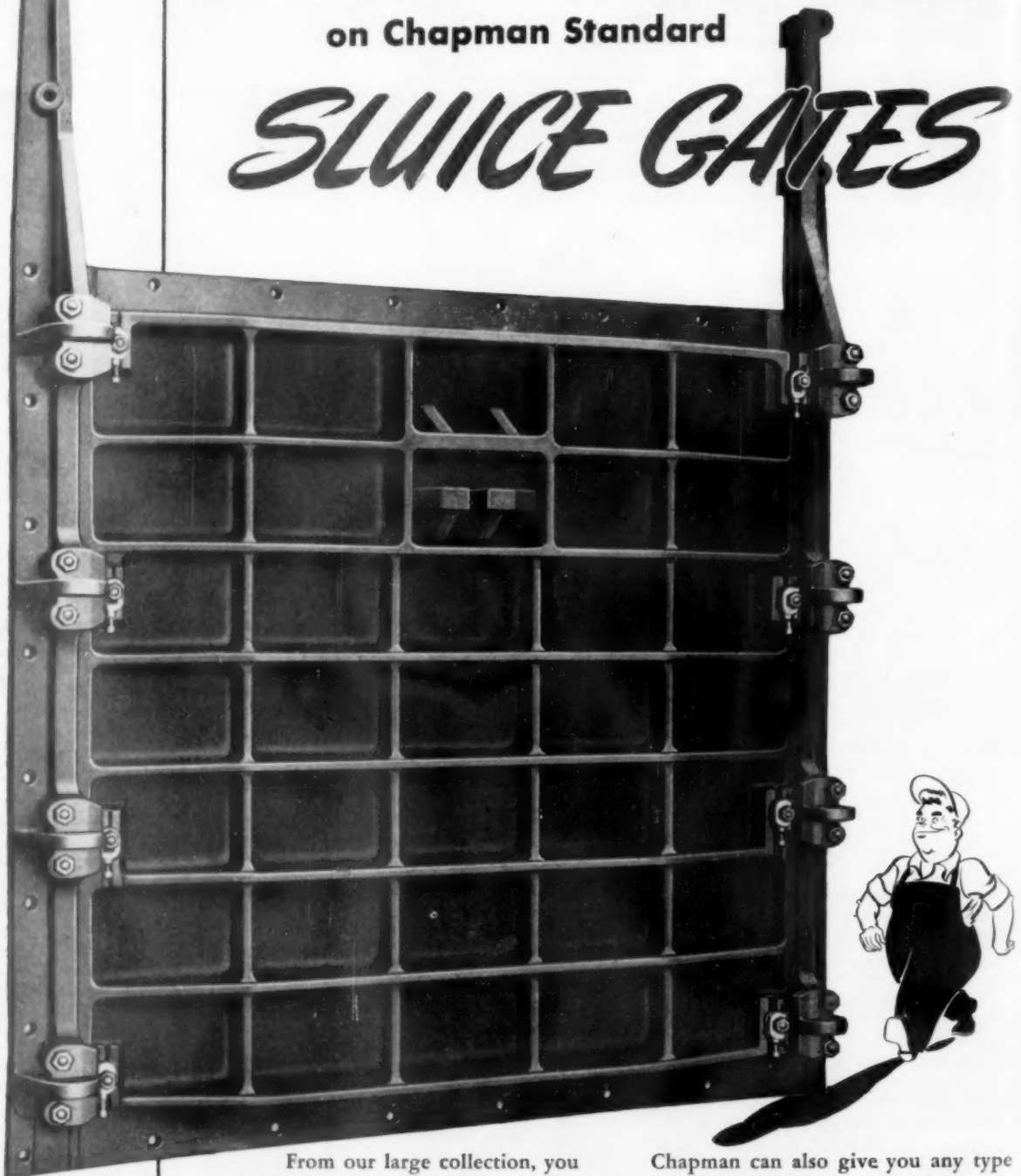

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Municipal and Civic Publications

Fiscal Relations of Federal, State, and Local Governments

STATE AND LOCAL FINANCE IN THE NATIONAL ECONOMY.—*By Alvin H. Hansen and Harvey Perloff. W. W. Norton & Co., Inc., New York. 1944. vii + 310 pp. $3.75.*

Thoroughly aware of the profound changes taking place in the functions of federal, state, and local governments, the authors tackle vigorously the fiscal and economic problems that city and state officials are currently up against. They show how a solution to many problems must lie in the elimination of such bogies as the belief that a vigorous state government implies a diminution in the sphere of local government, and similarly that enlarged activities of federal government necessarily encroach upon the proper functioning of state government. They challenge the claim that a large public debt is always a handicap and show how, under certain conditions, it may be a stabilizing and constructive factor. The volume undertakes an analysis of federal responsibilities and intergovernmental relations, demonstrating that only when the higher levels of government play their role vigorously and efficiently are conditions created under which subordinate units of government can effectively carry out the functions appropriate to them. Where state governments are strong and vigorous, efficient local government flourishes, the authors maintain.

A chapter is devoted to a reorganized federal, state, and local post-war tax program including alternate prospects for corporate income taxation. State and local tax defects, ways and means of modernizing local governments, and programs for urban redevelopment are discussed.

The book is a pioneer study of the fiscal relations of federal, state, and local governments, and one which belongs on the handy book shelf of any city official seeking a solution of his own local problems and to demonstrate that this country can accomplish full employment, increased public wealth, and stability of economic and social life in the years ahead.

Local Salaries in Virginia

SALARIES PAID POLICE OFFICERS IN VARIOUS VIRGINIA TOWNS.—*League of Virginia Municipalities, 902 Travelers Building, Richmond, Va. April 1944. Report 277. 5 pp. 25c.*

Contains information showing the salaries paid in 1943, to police officers and sergeants of various towns in Virginia. This data based on replies to questionnaires dated May 14, 1943.

Government in San Jose, Calif., 1941-1943

YOUR CITY GOVERNMENT—1941, 1942, *and* 1943. *San Jose, California. U.S.O. Hospitality House. 40 pp.*

A report authorized by the City Council of San Jose, Calif., pointing out the city's organization for defense, its work to meet wartime problems successfully, and its preparation for the peace to come. The report covers the wartime activities of the various city departments.

Sick Leaves

SICK LEAVE REGULATIONS.—*Washington Municipal Bulletin. Published by the Association of Washington Cities, through cooperation with the Bureau of Governmental Research of the University of Washington. Information Bulletin No. 89. April 29, 1944. 13 pp.*

A draft of an ordinance governing sick and vacation leave prepared for use in answering questions on the subject. Sick leave provisions from the city of Seattle Civil Service Department are listed. Also ordinances from the cities of Tacoma, Aberdeen, San Mateo and Des Moines.

Housing for All

HOUSING FOR THE UNITED STATES AFTER THE WAR.—*National Association of Housing Officials. 1313 E. 60th St., Chicago, Ill. Publication No. N193. May 1944. xix + 65 pp. 50c.*

Summarizes experience and changing ideals of NAHO since its report in 1934. Outlines major elements considered to be fundamental in post-war housing for the nation. Although nationwide in its approach, the Committee emphasized local responsibility for planning and execution of housing as fundamental to the program. Points out the necessity for private enterprise, government, and labor to work together as understanding partners, supported by an intelligent and vocal public opinion to achieve adequate housing. Problems of mortgage reforms, taxation, subsidies, land use and valuation, etc., are analyzed in the light of basic demands for urban, non-farm rural, and farm-area housing. It estimates a production by private and public enterprise of a million and a half dwelling units annually for the next 15 years for families that need them at prices they can afford. Emphasizes the neighborhood aspect of planning for civilized living and recommends the adoption of legislation by states authorizing the establishment of local housing authorities responsible for broad planning for the general development of community life.

Appliances for Fire Protection

LIST OF INSPECTED FIRE PROTECTION EQUIPMENT AND MATERIALS.—*Underwriters' Laboratories, Inc., 161 Sixth Avenue, New York 13, N. Y. January, 1944. 175 pp.*

Summaries of Listing Card Reports on appliances and materials examined primarily with reference to fire preventive and fire protective capabilities. Sections devoted to Installation and Use, Inspection Services, and other related topics.

Recreation Centers as Memorials

LIVING MEMORIALS and TEEN AGE CENTERS.—*Two publications of the National Recreation Association, 315 Fourth Avenue, New York 10, N. Y. 6 pp. 23 pp.*

The first pamphlet recommends that future memorials contribute more to public recreation and education than in the past. Contains photographs and suggestions for community recreation buildings, and neighborhood playgrounds and parks. The second pamphlet summarizes the experiences and progress of nearly 100 youth centers over the country. Both stress expansion of youth recreation programs, as desirable forms of commemorating the services of local men and women in this war.

Manual for Sanitary Engineers

WATERWORKS ENGINEERING IN DISASTER.—*Prepared by the Sanitary Engineering Section of the Medical Division, Office of Civilian Defense, Washington 25, D. C. December 1943. 147 pp.*

A technical manual for the use of waterworks and public health engineers who have need for this type of information in planning to meet special problems that arise as a result of wartime or natural disasters. The publication deals with technical matters involved in emergency operation and maintenance of waterworks systems; it also presents "good waterworks housekeeping methods" that are essential in regular water-works practice.

Bulletin on Post-War Planning

REGIONAL PLAN BULLETIN.—*Regional Plan Association, Inc., 205 East 42nd Street, New York 17, New York. Bulletin 62. April 17, 1944. 10 pp. 25c, $1 per year.*

Contains articles on the community's place in post-war planning. Considers the major needs of the average community to be new playgrounds, rehabilitation of blighted areas, control of new developments, and offstreet parking spaces. Maps and graphs included.

The Fundamental Need for Future Planning

THE ARCHITECTONIC CITY IN THE AMERICAS: SIGNIFICANT FORMS, ORIGINS, AND PROSPECTS. —*By Hugo Leipziger. The University of Texas Publication No. 4407. February 15, 1944. Available from the Bureau of Engineering Research, University of Texas, Austin, Texas. 169 illus. 110 pp. $2.00.*

Recognizing the necessity for a universal attitude of mind covering the whole of life as a fundamental requirement for future civic developments, the author sets forth in this well-illustrated volume a study of the problems and nature of intellectual integration in the light of historic architectural developments.

For the creation of any satisfactory modern environment, he holds, it is necessary to pass beyond the technical phases of housing and communal planning such as traffic, public utilities, hygiene, building techniques, physical amenities, comforts—now supplied in increasing abundance—to the formulation of a new intellectual reality born of an inner necessity. It is the steadily accelerating change in the mental and physical setup of modern man which demands attention.

Positive principles for the planning of urban and rural environments are lacking, the author holds, and before research and experimentation can evolve valid schemes for town and country there must be a merging of the philosophic, scientific, and technical thought of this age into a common sense of values and direction.

The first two chapters are devoted largely to a discussion of pre-Columbian architecture in the light of communal living and to the philosophic concepts which have at various epochs and places determined the outward forms of community life. This much-needed study of the underlying problem of this age, is no mere effort to revive tradition; it is, rather, a groping toward the formulation of a new directing spirit for our time born of the experiences of the race and illumined by the clearest intellectual light of the past and present.

Founder's Day Institute Discusses City of the Future

PLANNING THE AMERICAN CITY FOR THE POST-WAR WORLD. *Bostonia. April 1944. Boston University Alumni Association, 20 Beacon Street, Boston 8, Mass. 25 cents.*

Reports on the Founders' Day Institute of Boston University including reprints of addresses on The Present American City in Panorama by Harold S. Buttenheim, Editor of THE AMERICAN CITY; Post-War Population Trends by Warren S. Thompson, Director Scripps Foundation for Population Research, Miami University; Post-War Financial Planning for Metropolitan Areas, by Professor John F. Sly, Princeton University; and Labor and Management by Eric A. Johnson, President, Chamber of Commerce of the United States. The special issue also contains reports of other proceedings of the Institute held in Boston March 11-13, 1944.

Philadelphia City Planning

CITY PLANNING IN PHILADELPHIA.—*Citizens' Council on City Planning. 1717 Sansom Street, Philadelphia 3, Pa. April 1, 1944. 27 pp.*

Factual summary of the planning problems, machinery and procedures in Philadelphia. Primarily designed for the use of speakers, it reveals the points of view and policies of the Citizens' Council.

Indiana Planning Act

PLANNING LEGISLATION AND PROCEDURES, STATE OF INDIANA.—*Indiana Economic Council, 609-612 Board of Trade Bldg., Indianapolis 4, Ind. 1944. 112 pp.*

Manual clarifying local planning procedure in Indiana. Presents its legal background and summarizes the state planning act. Chapters devoted to individual problems of city, town, and state.

JUST SUPPOSE!

by Barbara Brown

Olney High School, Philadelphia, Pa.

Note: Several weeks ago, the United States Treasury Department and the Columbia Scholastic Press Association sponsored an editorial contest for the nation's high school students. Subject: War Bonds. Winner: 15-year-old Barbara Brown, a Philadelphia high school junior. In the interests of helping the Fifth War Loan Drive, now in progress, we are proud to print here the stirring message written by Miss Brown.

SUPPOSE *there were no tomorrows?* . . . Think about it for just a minute . . . No tomorrow for you, or your kid sister at home—or the brother who left for the Army yesterday. Did you ever think that we, who have had so few yesterdays, may have no tomorrows?

It *has* happened, you know. To Jack Feldman, and to Bob Ernest—and to fifteen other boys who sat in our classes just last year . . .

They will have no tomorrows. They died before they ever had a try at living . . . so that we here at home might have our chance.

There are millions who were asked to give up more than a double feature at the Earle . . . or a spiffy new pair of pumps for next week's formal. A soda is a pretty insignificant sacrifice, when you think of things like—

The kids in Russia, who live on a few ounces of cereal a day. *They've never seen an ice-cream soda.*

The Polish boys and girls, who would be in school right now, just as we are . . . *if there were any schools left.*

The French youths who've never had a hamburger when they were out on a date—or any other time, for that matter. They are old, very old . . . *older than you and I will ever be. . .*

There are millions of them . . . in Norway . . . Holland . . . Denmark . . . Belgium . . . They would stare in amazement if they could be here to see—

A jalopy painted bright yellow. "The Tin You Love To Touch" printed in big, green letters on the back.

A high school senior, uncomfortable in his first tuxedo . . . calling for his date, looking nervous.

Millions of things that we take for granted . . .

There is such a feeling of permanency in our tight little world. We'll go to school with the gang, today . . . and tomorrow . . .

BUT, WHAT IF THERE WERE NO TOMORROWS? There's only one way to be sure, you know—

Buy War Bonds . . . That's a simple little phrase. It's the American way of saying what we mean in a few direct words. *Buy War Bonds.*

Yes—you and everybody must buy War Bonds. We've *got to* buy more and more and more of 'em. Just get the idea into your head that your $18.75 might—just *might* end the war one-fifth of a second sooner. That maybe, in that one-fifth of a second, the boy next door could be on the receiving end of a bullet . . . Then you'll know that it's worth any small sacrifice you have to make!

We've got to keep on plugging, saving, convincing. Giving our pin money . . .

Tell everybody—sell everybody! We can't take no for an answer . . . Because we are buying *tomorrow—and tomorrow—and tomorrow.*

SUPERIOR ENGINES

Division of The National Supply Co.

Executive Offices: Pittsburgh, Pa.

Sales Offices: Springfield, O.; Boston; New York; Philadelphia; Washington, D. C.; Jacksonville; Houston; Ft. Worth; Tulsa; Los Angeles; Chicago. Factory: Springfield, Ohio.

★ KEEP BUYING WAR BONDS ★

For Planning and Buying

MUNICIPAL INDEX AND ATLAS 1944—*The American City Magazine Corporation, 470 Fourth Avenue, New York 16, N. Y. 664 pages. $5.*

For 20 years this compendium of buying information for city officials has been building reputation as a comprehensive municipal service for those who plan, specify, select, and purchase equipment and materials for maintenance and for capital expansions.

The volume is divided, as usual, into nine sections, each specializing in the methods, data, products, and manufacturers employed in a particular municipal field. The first two sections comprise the Municipal Index Atlas of 57 world, continent, and state maps with the populations of towns and cities, and the Municipal Index Directories of Municipal Officials. The next six sections serve the buying needs respectively of those who maintain and build streets; water plants and distribution systems; sewers and treatment plants, refuse collection systems and incinerators; street lighting, electric generating and distribution systems; fire and traffic departments; parks, playfields, playgrounds, and swimming pools; accounting and office systems.

A new feature this year is the Municipal Index of Manufactures of Water Supply and Sewage Treatment Equipment and Materials. Here are found carefully checked classified lists of manufacturers of pumps, pipe, purification equipment, meters and instruments, tanks, hydrants, and chemicals. The object in compiling these lists was to furnish a conveniently arranged list of leading manufacturers who actually make the products under which their names appear.

Editorial features in MUNICIPAL INDEX 1944 include studies of the status of street equipment, lubrication of automotive equipment, best practice in applying traffic paint, a summary of states of 5,372 water-treatment plants, lubrication in a sewage plant, diesel operation in wartime, traffic signals and parking meters, making a new swimming pool successful, new municipal airports, simplified municipal accounting and office work.

What do you really want when you buy a sewage pump? How should you set about obtaining a refuse incinerator? Should contractors or the city take equipment bids for new plants? What is the down-on-the-ground successful way to work out a new street-lighting system? What is the future for fire departments? What are the preliminary measures which make a traffic plan work? How many people should a playfield serve? Where do cities get money for parks and playgrounds? How can your accounting systems be mechanized without mistakes? All these and other practical questions are carefully discussed and answered in MUNICIPAL INDEX 1944. These studies and articles are designed to aid city officials in the making of plans for better maintenance and more efficient operation.

Almost all plans end with the proper selection of the equipment which turns blueprints into working projects. Now as hardly ever before, authoritative information on new products is vital. What quality of products in each field is being offered now? What product improvements lie behind the curtain of war? The best answers and the most usable information are furnished by the manufacturers themselves. In 446 pages they describe the products on which their reputations have been built. In these pages you have a rich and practically complete selection of all the things which pave and clean streets, dispose of waste, make your city safer and more attractive. All these essential products are indexed in the opening 18 pages of MUNICIPAL INDEX 1944.

Detroit's Railroad Facilities

PRELIMINARY REPORT ON RAILROAD FACILITIES: *A Tentative Plan of Suggested Terminal Improvements for the Detroit Area. By the Detroit City Plan Commission, Detroit, Mich. December 1943. 14 pp. and maps.*

This report deals with railroad features as related to the Master Plan for the city and includes recommendations for immediate improvements and long-range development of railroad facilities in the Detroit area. Proposals not final but offered for discussion.

Identifying Water-Formed Deposits and Corrosion Products

SYMPOSIUM ON THE IDENTIFICATION OF WATER-FORMED DEPOSITS, SCALES, AND CORROSION PRODUCTS BY PHYSICO-CHEMICAL METHODS.—*Presented at the Forty-Sixth Annual Meeting, American Society for Testing Materials, Pittsburgh, Pa., June 29, 1943. Copies available at A.S.T.M. Headquarters, 260 E. Broad St., Philadelphia 2, Pa. 44 pp. 65c.*

This 44-page booklet includes three technical papers, general discussion, and an extensive introduction describing the use of physico-chemical methods in identifying water-formed deposit scales and corrosion products. To provide the information a series of tests were carried out in cooperating laboratories involving macrochemical analysis, petrographic examination, and X-ray diffraction. Details of this test and the interesting results are described in the introduction by H. C. Miller. The technical papers by outstanding authorities cover:

X-ray Diffraction Methods in the Study of Power Plant Deposits—C. E. Imhoff and L. A. Burkardt

Diagnosis of Water Problems at Limbo Station—Everett P. Partridge, R. K. Scott, and P. H. Morrison

The Interpretation of Analysis and Problems Encountered in Water Deposits—J. A. Holmes and A. O. Walker

Trends in City Development

A CHART FOR CHANGING CITIES.—*Prepared by the Committee on Urban Redevelopment, California Housing and Planning Association, 401 Jackson St., San Francisco, 11, Calif. 1944. 20 pp.*

Presents the cumulative cause and current trends relating to the pattern of city development, analyzing the underlying factors that produce residential slums and blighted business districts, the tempo and direction of population movements, with suggested corrective measures.

Cincinnati Reports

ANNUAL REPORT FOR 1943.—*Department of Purchasing, City of Cincinnati. Cincinnati, Ohio. Mimeo. 9 pp.*

Besides summarizing the purchases of materials and equipment necessary for the functions of city departments, this report deals with the difficulties encountered under the Government's "Controlled Materials Plan" and rationing regulations.

Employment in New York State

NEW YORK AT WORK FOR VICTORY AND THE FUTURE.—*Annual Report for the Division of Commerce. Executive Department, New York State. Albany, N. Y. 1943. 38 pp.*

Records the efforts of the Division of Commerce to promote business and employment opportunities for the people of New York State, differentiating between the Division's wartime activities and its broad post-war development program.

Planning the National Capital

WASHINGTON, A PLANNED CITY IN EVOLUTION.—*An Address by Major General Ulysses S. Grant, 3rd, Chairman, National Park and Planning Commission. The Joint Committee on the National Capital, 901 Union Trust Bldg., Washington 5, D. C. February 1944. 20 pp.*

Traces the civic development of the National Capital with a discussion of the original L'Enfant plan and deviations from its principles during the years. Emphasizes architectural aspects of Washington. Contains proposals by the National Capital Park and Planning Commission for further municipal improvements.

Lincoln's Country

STATE PARKS AND MEMORIALS. *Issued by the Department of Public Works and Buildings, State of Illinois, Springfield, Ill. 36 pp.*

An illustrated pamphlet describing historic sites and natural scenic attractions in the State of Illinois.

Other Reports Received

IRVINGTON, N. J.—Annual Report of the Municipal Accounts of the Town of Irvington for the year ending December 31, 1943. 86 pp.

WINSTON-SALEM, N. C.—Statement of Financial Information of the City of Winston-Salem. January 1, 1944. 7 pp.

MINNEAPOLIS, MINN.—Budget Facts and Financial statistics of the City of Minneapolis for 1944. 28 pp.

NEW HAVEN, CONN.—The Bonded Debt of the City of New Haven. 1920-1944 Inclusive. Report No. 30. May 1, 1944. 27 pp.

BALTIMORE, MD.—Pertinent Financial Data of the City of Baltimore, as at January 1, 1944. Fourteenth Annual Issue. 16 pp.

SALT LAKE CITY, UTAH.—Auditor's Annual Report of Salt Lake City for the year ending December 31, 1943. 78 pp.

City Manager Appointments

H. WESLEY CLARK, city engineer, has succeeded Charles H. Brown, Jr., as city manager of Niagara Falls, New York.

FORREST E. DOUGAN, former agent of State Bureau of Criminal Investigation, has been appointed city manager of Iowa Falls, Iowa, to succeed Floyd Klippel who resigned to enter private business.

JAMES O. FENNER, a local business man, has been appointed manager of Belfast, Maine, to succeed Cornelius Frost.

R. J. GREENBERG, former manager from May 1932 to December 1943, has been reappointed city manager of Sturgis, Michigan, succeeding O. O. Johnson.

O. G. HOLWAY, Supt. of public works and assistant manager of Superior, Wis., has been appointed first manager of Ishpeming, Michigan.

C. E. LAYTON, city manager of Waycross, Georgia, for the past two years, has been appointed first city manager of Thomasville, Georgia, effective June 1.

M. G. MCGEENEY has succeeded Denis O'Hegarty as city manager of Waterford, Ireland.

R. T. PRICE has been appointed acting manager of Muskogee, Oklahoma, to succeed Roger Tucker.

LESTER W. SMITH, a former county and state official, has been appointed city manager of Avalon, California.

EUCLIDE VENZINA has been appointed first city manager of Longueuil, Quebec.

W. T. WELLS, city engineer, has been appointed acting manager of Radford, Virginia, to succeed H. T. Roberts who resigned because of ill health.

RAYMOND P. DAVIS, a former selectman, has been appointed first manager of Brownsville, Maine.

DWIGHT D. DILWORTH has been appointed acting manager of Montrose, Colorado, to serve during City Manager Oren L. King's leave for military service.

CLARENCE E. RIDLEY
Director, International City Managers' Association

★

Free Your Sewerage Systems

FROM THESE HAZARDS

Part of 18,000-ft. line of 36-in. ARMCO Paved Invert outfall sewer across swampy ground near Newport News, Virginia, carries treated sewage.

As you plan your sewerage projects for postwar construction, remember that by using Asbestos-Bonded ARMCO Sewer Pipe you can gain these four important advantages:

1. FREEDOM from disjointing and infiltration
2. FREEDOM from continual maintenance and early replacement
3. FREEDOM to use for both severe and normal conditions
4. FREEDOM to salvage and re-use elsewhere if conditions or requirements change

Those are the freedoms or assurances that Asbestos-Bonded ARMCO Sewer Pipe gives you. They come from flexibility—the ability to give slightly under load—light weight, bolted couplings, tightly-adhering bituminous coating over galvanizing, and a thick pavement to resist wear in the bottom. Write for the ARMCO Sewer Book. ARMCO Drainage Products Association, 195 Curtis St., Middletown, Ohio.

Buy More War Bonds

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Armco Sewer Pipe

News and Illustrations

Items of Interest to City, Town and County Officials and Others Concerned with the Economical Construction and Efficient Operation of Public Improvement Undertakings

Largest Single-Acting Diesel Engine

The most powerful single acting diesel engine ever built in this country has just been completely tested and found successful. This new engine, now being installed in a Victory ship, will be another link added to that mighty chain which the Allies, with the aid of foresighted engineers and manufacturing concerns, are forging around the Axis nations.

The Nordberg Manufacturing Co., Milwaukee 7, Wis., builders of this model and in 1915 manufacturers of the first large diesel engines in this country, announces that the engine is available in sizes from 4,000 to 8,000 hp, in 6 to 12 cylinders for single or twin engine direct drive; and also for twin engine, geared single-screw ship propulsion, as well as for stationary applications from 3,000 kw to 6,000 kw.

The design follows that of other Nordberg 2-cycle diesels of recent years with the exception of the camshaft drive and reversing mechanism. The camshaft because of the much greater physical dimensions of this engine is located overhead.

The salient features of this engine are: simplicity of design, rugged construction, streamlined appearance, and the accessibility of all the working parts. Every effort was made by the designers to simplify and reduce the number of parts.

This engine is equipped with mechanical fuel-injection equipment which was developed by Bosch in collaboration with Nordberg engineers. The fuel pumps are like the engine, the largest of their type ever made in this country and special consideration had to be given to these physical dimensions as well as to mechanical details.

This engine for stationary service can also be arranged to burn natural or manufactured gas with the thermal efficiency of the diesel cycle. The usual provision for converting the engine to run on fuel oil may also be made.

The fuel consumption of this engine when running on gas is expected to be equal to or better than that of a similar type engine of which approximately 100,000 hp are now in service. Performance records show that when running under the load conditions of the average stationary installation, the fuel consumption per kwhr is about equal to the fuel consumption per hphr of the conventional gas engine, considering the heating valves of the gas on a comparable basis.

The engine was erected in the company's shop and given the following tests:

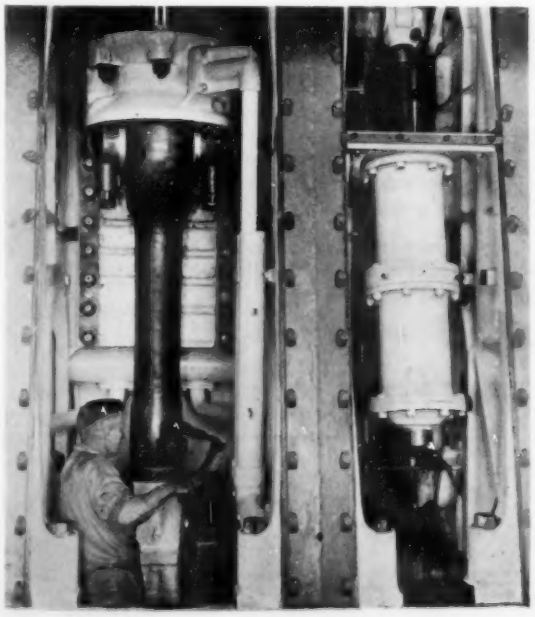
(1) An endurance run with the engine developing normal shp of 6,000 at 160 rpm for 360 hours continuously

(2) An overload of 110 percent or 6,450 shp for 48 hours continuous run at 165 rpm

(3) An overload of 125 percent or 7,300 shp for 2 hours at 172 rpm

Other features were checked to determine starting, governing and maneuvering characteristics and fuel consumption at various loads with corresponding propeller rpm.

Mr. Delbert Kay, Advertising Manager of the Nordberg Manufacturing Co., advises that "in recognition of continued high standards of production of war equipment, we have been awarded the fourth star to our Navy 'E' pennant and the third star to our Maritime 'M' pennant."



Showing the accessibility to the pistons on one of the 6,000 hp marine diesel engines. The reversing mechanism and other parts are within the framing.

Vernon Edler: Peerless Pump V-P.

Vernon Edler, Vice-President of the Food Machinery Corp., and Manager of the Peerless Pump Division, 301 W. Avenue 26, Los Angeles 31, Calif., died in Los Angeles on May 1 at the age of 47. Mr. Edler founded the Vernon Edler Corporation which merged with the Food Machinery Corporation in 1929. He was appointed the Resident Manager of the company at Los Angeles, and made Vice-President in 1935 when he also became Manager of the Peerless Pump Division, Los Angeles, and Fresno, Calif. and Canton, Ohio.

Vernon Edler

He was widely known in pump circles and was instrumental in developing Peerless pumps to a major position. He was a veteran of World War I.

One of 8 Available Designs

PERMANENT BEAUTY in POSTWAR PLANNING

"CALIFORNIA" BENCHES

Should have a place in every plan for Parks, Playgrounds, Pools and Golf Courses.

Complete Benches
Concrete Bench Ends only
Molding Equipment

DRINKING FOUNTAINS

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WATER & GAS METER BOXES—VALVE BOXES
ELECTRIC DISTRIBUTION & PULL BOXES
MANHOLE COVERS & FRAMES

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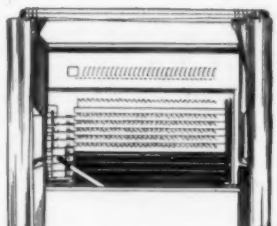
AUTOMATIC VOTING MACHINES ELIMINATE SPOILED AND DEFECTIVE BALLOTS

At the coming Presidential election many paper ballots will be invalidated because of:—

1. Distinguishing marks which can be construed as identifying the ballot. (*A)
2. Voting for more than the proper number of Candidates. (*B)
3. The failure of the voter to keep the cross mark (X) fully within the Voting Square. (*C)
4. Attempted erasure to correct a mistake.
5. The use of a pen instead of a pencil.
6. Enthusiastic citizens who write some message on the ballot.
7. Some voters insisting on scratching the names of those candidates they do NOT wish to vote for (In some States this is legal). (*D)

THE OLD PAPER BALLOT

MODERN 'MECHANICAL BALLOT'



The voting machine does not permit any of these mistakes. Only the proper number of candidates can be voted for. Distinguishing marks or erasures are impossible. Prior to the adoption of voting machines in Baltimore, it was estimated that upwards of 10,000 spoiled or defective ballots were cast at every election thereby paving the way for a change of results in every close contest.

Recently the Daughters of the American Revolution, the General Federation of Women's Clubs, and the National League of Women Voters conducted their Annual elections of Officers on Voting Machines at National Conventions held in New York, St. Louis and Chicago.

We invite other organizations to inquire as to our rental service.

AUTOMATIC VOTING MACHINE CORPORATION

JAMESTOWN **NEW YORK**

In the center is the new rechargeable flashlight battery. When used in a 3-cell flashlight, similar to the one on the left, a wooden filler plug is needed. The battery just fits the standard 2-cell flashlight.

Storage Battery Flashlight

Difficulties encountered in obtaining adequate supplies of flashlight batteries have been overcome by Chief C. E. Peterson, San Diego, Calif. His department is now using a plastic case, rechargeable flashlight storage battery, made by the Ideal Commutator Dresser Co., of Sycamore, Ill.

Reports indicate that satisfactory bright light is available for a longer period from the storage battery than from dry cells—usually from two to three weeks of hard usage. The storage batteries are turned in every other week, and freshly charged batteries are issued. Some details require replacement at shorter intervals. Recharging is completed in 24 hours by the use of an economical charging rack which handles from one to six batteries and is plugged into 110 volts, alternating current. Each battery may be recharged several hundred times and present indications are that battery cost will be cut more than 50 percent, excluding loss or breakage. Standard base bulbs of 1.9 volts are available to replace the higher voltage bulbs used with dry cells.

The battery is the size of two 1¼-inch dry cells, end to end, and replaces them. It may be used in a three-cell flashlight by inserting a filler plug in place of the third cell. These plugs are available from the manufacturer, but were made by the San Diego Police department out of 1¼-inch round wood, with a metal plate at each end tied together by a metal rod through the center of the wood.

Minnesota Mining Names Advertising Agency

Effective July 1, the Minneapolis office of Batten, Barton, Durstine & Osborn will be the advertising agents for the Minnesota Mining & Manufacturing Co., 900 Fauquier Ave., St. Paul 6, Minn., according to a recent announcement by the company. They will have charge of advertising of all products of the company, including Scotchlite reflective material used for road signs.

The account executive will be Porter E. Harder.

Save all the way 'round with a GREENLEE Hydraulic Pipe Pusher! One-man operation cuts vital man-power required.

Pushing pipe **through the ground under concrete flooring, streets, sidewalks, lawns, eliminates tearing up, back-filling, tamping, tunneling, re-paving. Just a short trench accommodates the pusher, does away with extensive trench digging.**

Smooth, easy performance . . . portable . . . easy to carry and set up . . . GREENLEE pushers develop up to 75 tons pressure and have 6 speeds for varying soil conditions.

A GREENLEE Hydraulic Pusher does the job quicker, better—pays for itself in man-hours saved on first few jobs. For complete facts and prices, send for free booklet S-117 today. Write Greenlee Tool Company, 2026 Columbia Avenue, Rockford, Illinois.

Get Ready with Greenlee!

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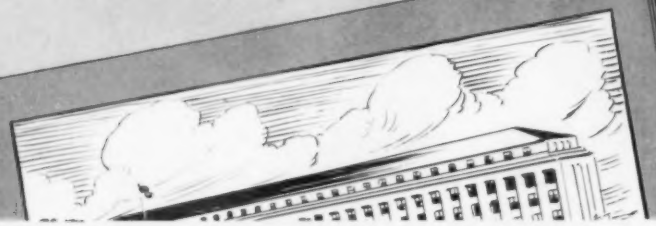
FOR THE CRAFTSMAN

GOVERNMENT CIVIL SERVICE *Personnel Records*



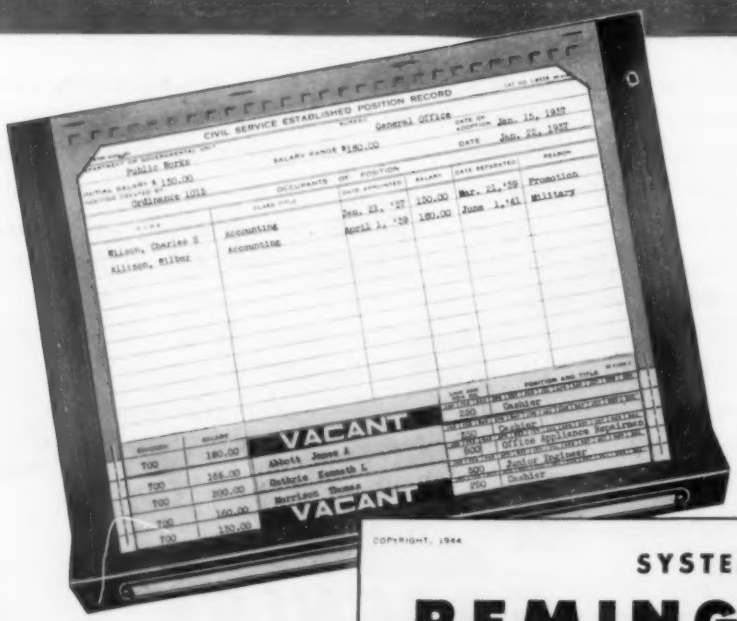
Send for your **FREE** *copy of this valuable booklet!*

This new folder is written expressly for directors of Civil Service Agencies who need a time-saving system for the administration of vital personnel activities.

The folder is fully illustrated and presents a new Kardex Visible Control System that is ready for your use whether your needs are large or small.

WRITE TODAY FOR YOUR FREE COPY

Mail your request to the Government Research Department, Systems Division, Remington Rand Inc., Buffalo 5, New York.



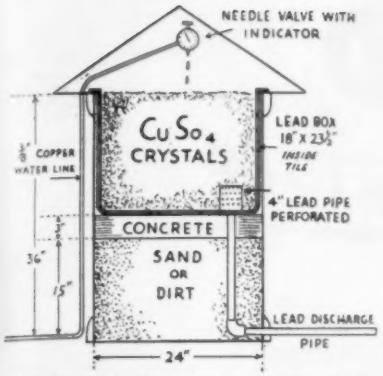
Many Civil Service Agencies are now using, with remarkable success, the new Kardex Civil Service System described in this folder. One of the cards used is shown here. Other cards and complete details of the operating advantages are illustrated and described in this timely brochure.

COPYRIGHT, 1944

SYSTEMS DIVISION

REMINGTON RAND

Buffalo 5, New York



A copper sulphate solution feeder used by the Atlanta, Ga. water works. Note needle valve for water feed to crystals.

Copper Sulphate for Water Treatment Plants

The use of copper sulphate in water treatment plants has been shown by recent tests to be effective in the reduction of coagulation costs, aiding in sterilization, and taste and odor control.

Copper sulphate, manufactured by the Tennessee Corp., Atlanta, Ga., can be used in any modern filtration plant in a continuous feed and so prevent the multiplication and concentration of micro organisms which interfere with coagulation and cause severe taste disturbances.

In such treatment plants, there is no danger of copper passing the filters so long as the pH of the water is above 7.0. By proper application the copper will be carried throughout the basin and on to the filter—thus, giving the added advantage of reducing growths within the filters which results in longer filter runs.

New Calculator Simplifies Working with Wood

The Greenlee Tool Co., 2026 Columbia Ave., Rockford, Ill., manufacturers of registered tools for the craftsman, have introduced a new calculator for those working with wood.

This is designed to solve the many puzzling problems which come up: by merely adjusting the dial you can convert linear to board feet, determine slope per foot in degrees, find comparative hardness, weights, shrinkage, warping and ease of working of various woods.

Also included on the Calculator are bit sizes for head, body, and thread of standard screws, nail specifications, and tips on tool sharpening.

This Handy Calculator may be obtained from the company for 10c.

ELECTRICAL CORROSION CONTROL

Proven on hundreds of tanks from coast to coast, Rusta Restor—the cathodic (i. e. electrical) method maintains steel tanks in an "electro-negative" state that not only prevents rusting but gradually removes the effect of any earlier rusting.

Rusta Restor is modest in first cost and uses the current required by only one light bulb—at safe low voltages. Each installation engineered to the individual tank and water conditions. Electrode, or the more newly developed electrodeless type that avoids any fouling due to icing. Detailed description of interest to engineers and operating men sent on request. Write today.

RUSTA RESTOR
Division of
THE JOHNSTON & JENNINGS CO.
861 Addison Road **Cleveland 14, Ohio**

WATER MAIN DISINFECTION

Mains
Any Size
Any Place
Any Time

Complete Service furnishing

Chlorinating Equipment
All Chemicals
and
Supervision of
Chlorination

Call or Write for Estimate

LUTHER and WOOD
310 Chandler Bldg., Wash. 5, D.C.
Phone NA. 5934-0906-1561

★ ★

TO USE LESS FIBRE . . . USE FRESH FIBRE

AFRICAN BASS FIBRES

INDIA PALMYRAH STALKS

The longer mileage you obtain from fresh broom fibres means less time-taking refilling of the broom core and valuable man-hours put to an extra use. The use of fresh, high-quality fibres in your mechanical sweeper is sound economy these days.

We are able to service every need in all types and sizes. We would be happy to receive your request for samples and quotations.

MOUNTAIN HICKORY SPLINTS

STEEL WIRE SWEEPER STALKS

The OTTO GERDAU CO.

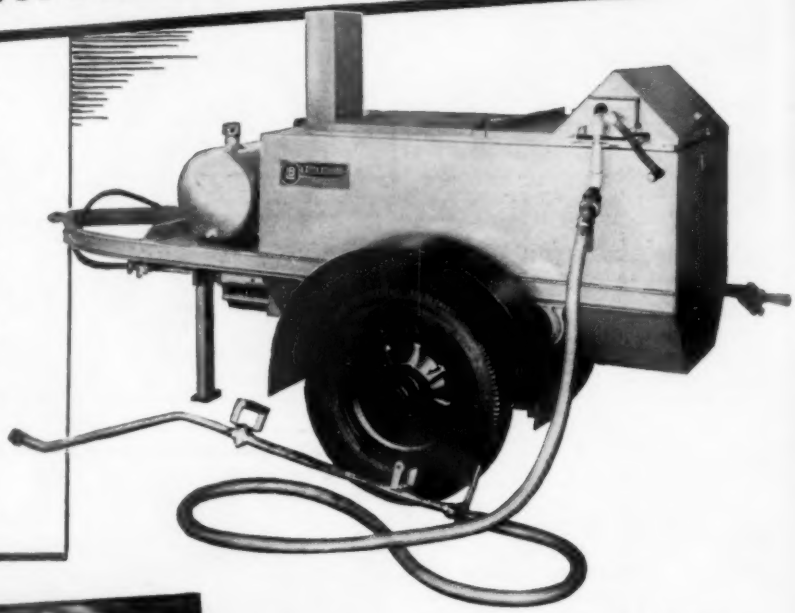
82 Wall Street, New York 5, N. Y.

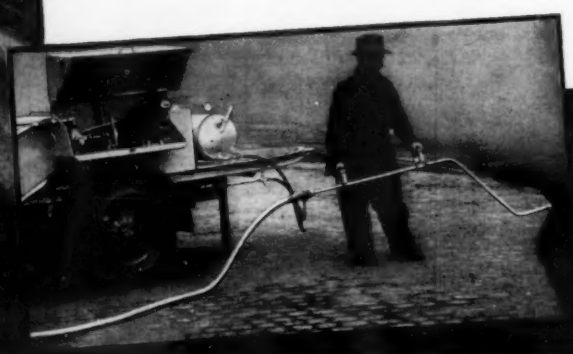
MODEL No. 84-HD MAINTENANCE KETTLE

Here's the Kettle for post-war Road Maintenance with two Patented Features that assure greater heat distribution and a constant flow of melted material.

One of these features, "Double Heat Circulation System," utilizes the entire heat from the burner and distributes it evenly throughout the Kettle, giving faster heating. The other, "Screened Reservoir," keeps the cold materials when added, from cooling off the already melted material, also forces the new materials to the heated sides, making them melt faster.

For an efficient Black Top Road Unit, there is none to equal the Littleford 84-HD Kettle.





When shoulder work is required, the 84-HD with hand spray attachment will do the job. Only two men are required to operate this 84-HD Kettle.

The 84-HD with Motor Spray Attachment is a one-man Kettle. All controls are in the operator's hands. For road repairs, this unit can cut the cost and speed up the work.

Road repairs such as holes, sub-grade failure, etc., need attention now and after the war. The 84-HD Kettle with hand spray or motor spray attachments can save costly repair work if used to keep road in fit condition.

BLACK TOP ROAD MAINTENANCE EQUIPMENT — LB — SINCE - 1900

LITTLEFORD

LITTLEFORD BROS., INC.
500 E. Pearl St., Cincinnati 2, Ohio

Personnel Changes at Pittsburgh Meter

Colonel W. F. Rockwell, President of Pittsburgh Equitable Meter Co., Pittsburgh, Pa., has recently announced the following changes:

N. J. Kenny

N. F. Kenny, formerly General Manager of the National Meter Division, 4207 First Ave., Brooklyn, N. Y., has been transferred to the home offices in Pittsburgh to serve as Assistant to Colonel Rockwell. He has also been appointed the Chairman of the Post-War Products Development Committee.

A. R. Whittaker

A. R. Whittaker will take over the duties of General Manager and has been placed in complete charge of all functions at the Brooklyn factory. He was formerly Factory Manager of the National Meter Division.

Firm Organized for Housing Research

Announcement has been made of the establishment of Robert L. Davison Associates, 299 Madison Ave., New York 17 N. Y.

The organization will do consultation, research, and development work on new materials, construction methods, equipment and family requirements in the housing field.

Mr. Davison was for thirteen years Director of Research of the John B. Pierce Foundation.

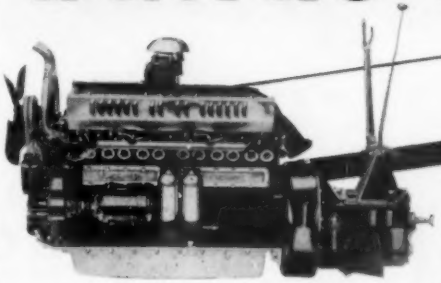
Searight Acquires Control of Western Cataphote

William S. Searight, Vice-President of the Western Cataphote Co., Toledo, Ohio, through the purchase of interests held by Charles T. Harther, President, is now sole owner of the company.

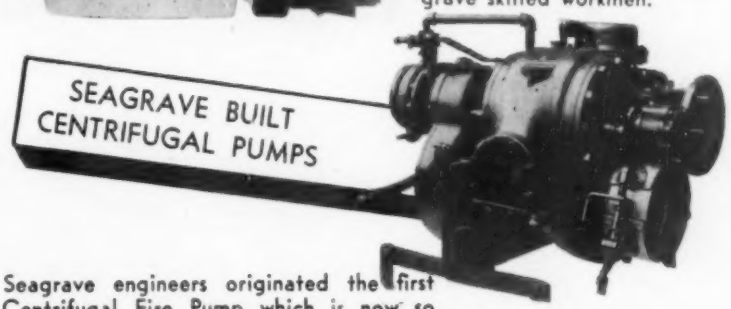
The company was affiliated with the Libbey Glass Company, until 1930 when Messrs. Searight and Harther bought it and changed its name to Western Cataphote.

This organization manufactures signs for highways and other purposes among them reflecting house numbers. At present 50 percent of its production is devoted to the war effort.

SEAGRAVE builds 'em all



Efficient, trouble-free power plants designed by Seagrave engineers and built by Seagrave skilled workmen.



Seagrave engineers originated the first Centrifugal Fire Pump which is now so widely used by fire apparatus manufacturers. Seagrave built Centrifugals are powerful and dependable.

Seagrave designed and produced the first all-steel aerial ladder in America. No bolts, holes or rivets . . . it's all welded construction.

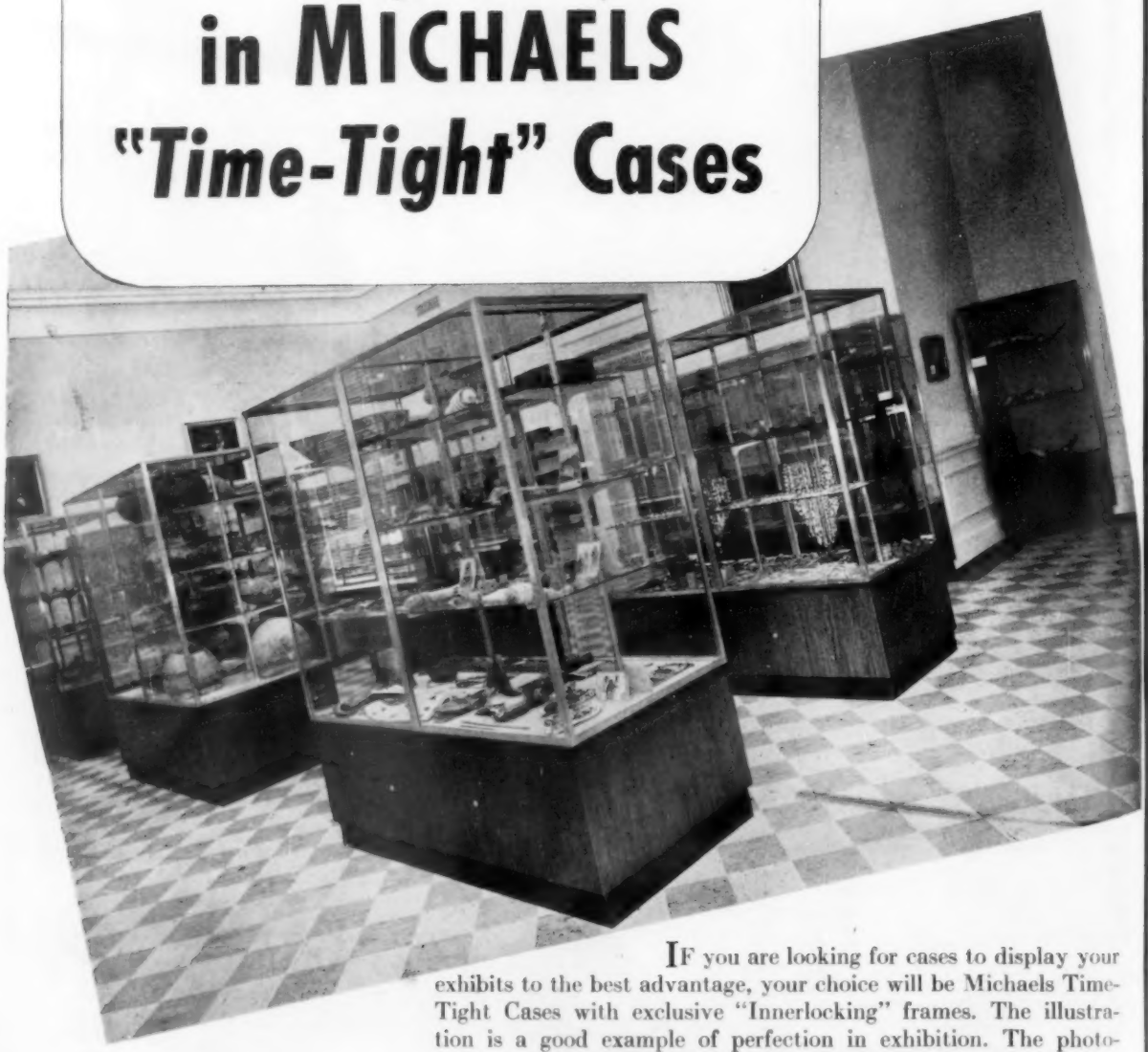
From bumper to rear step, a Seagrave is all Seagrave . . . Designed by Seagrave engineers . . . built by Seagrave expert mechanics . . . It always pays to specify Seagrave.

THE SEAGRAVE CORPORATION
Columbus, Ohio

BICKLE-SEAGRAVE, Ltd
Woodstock, Ont.

THE GREATEST NAME IN FIRE APPARATUS

Exhibited Perfectly in MICHAELS "Time-Tight" Cases



IF you are looking for cases to display your exhibits to the best advantage, your choice will be Michaels Time-Tight Cases with exclusive "Innerlocking" frames. The illustration is a good example of perfection in exhibition. The photograph was taken in the State Archives and History Building, Montgomery, Ala. Although Michaels Cases are not available, our illustrated folder which gives complete information, will help you with your postwar plans. When the war is over Michaels will resume the production of Time-Tight Exhibit Cases, MI-CO Parking Meters, Bronze Tablets and other ferrous and non-ferrous metal products.

MUSEUM CASE DIVISION OF

THE MICHAELS ART BRONZE CO., Inc.

Manufacturers since 1870 of many products in Bronze, Aluminum and other Metals

COVINGTON, KENTUCKY

Vapor Phase

If you are interested in the economy and trouble-free efficiency of your gas, gasoline or diesel power equipment investigate the merits of the Vapor-Phase Waste Heat Recovery System, manufactured by the Pacific Enterprise Products Co., 2833 E. 11th St., Los Angeles 23, Calif.

Here is a report by the City Engineer of Visalia, Calif., on the value of the Vapor-Phase Uniform High Temperature Cooling system used at the Visalia sewage disposal plant which has been operating on sludge gas continuously since July, 1939:

July 1939. Vapor-Phase Cooling installed with new engine, which was operated continuously on sludge gas, except for monthly oil changes, until February, 1940, when, on inspection by city mechanic, only minor adjustments and replacements were required.

February 12, 1941. Engine was shut down and inspected. After 13,770 hours, compression in all cylinders was good. Oil consumption was 1 pt. per 24 hrs. The oil (drained every 30 days) was clean. No repairs had been made since February, 1940, and no parts needed to be replaced.

February 22, 1942. N. A. Huth, City Engineer, and Mr. Bruce, Plant Operator, reported on engine repairs since February, 1940. Rings and gaskets were replaced and valves ground. Parts cost $42.60 for engine service of 23,650 hours.

December 1, 1943. The engine ran continuously, except for brief periods for oil drains, minor adjustments and exterior repairs. This third inspection showed a maximum wear on the cylinders of .008 inches. The shaft was out .005 inches. Valves and guides were in good condition, requiring only refacing of the valves.

Merrihue Named Manager G-E Apparatus Advertising

Willard V. Merrihue has been named Manager of the Advertising and Sales Promotion Divisions of the Apparatus Department of the General Electric Company, Schenectady, N. Y., according to a recent announcement. Simultaneously he was named a member of the apparatus sales committee of the company.

Willard V. Merrihue

Mr. Merrihue has been associated with the company since 1925 when he joined the editorial section of the publicity department. He has served at various times since 1930 as assistant manager of the industrial advertising section of the department, division manager of central station advertising, and assistant to the manager of the publicity department, in charge of the apparatus division, the position he held until his new appointment.

In 1933 he received a Charles A. Coffin Foundation Award of the company for "initiative, ingenuity and perservance in devising a new and unusual sales plan."

R. P. Van Zile has been appointed District Manager of the East Central District of the General Electric Company's Electronics Department, according to a recent announcement by A. A. Brandt, General Sales Manager of the Department. Mr. Van Zile will have his headquarters at 4966 Woodland Ave., Cleveland, Ohio, and will be responsible for the sale of all products of this department in that district.

R. P. Van Zile

Mr. Van Zile became associated with General Electric in 1930 as Radio District Manager in the Chicago and Pittsburgh districts. He subsequently served as Appliance District Manager for the General Electric Merchandise Department in Dallas, and starting in 1935 served in the same capacity in Atlanta. In 1937 he became radio representative for G.E. in the southeast and in October 1942 transferred to the Washington office to represent the G.E. Electronics Department in the sales of communications equipment to the Navy.

RIGID BOARD SHEATHING

The multi-purpose Backer Board for damp-proofing or insulation.

Comprised of an Asphalt mastic between two sheets of saturated felt, Servicised Rigid Board Sheathing is a real 'economy' product made to our high efficiency standards.

Easily applied, effective and durable, it is the ideal lining under wood, metal or concrete.

Literature and prices on request.

SERVICISED PRODUCTS CORP.

6051 W. 65th St. Chicago 38, Ill.

Once . . . . an economy and a convenience

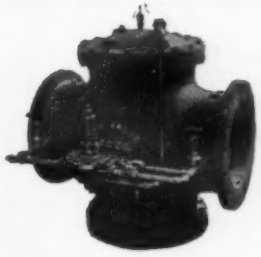
Now . . . . a wartime necessity

Ross Automatic Valves

Surge Relief Valves—

Protect **distribution systems against excessive pressures.**

Prevent **over-drafting of a deep well by supplying constant back-pressure.**



Altitude Valves—
Single or double-acting

Prevent **overflow of tanks, standpipe or reservoirs.**

Retain **supply on off-peak loads. Make storage available for peak load periods.**

Control **head during filtering operations.**

Reducing Valves—

Regulate **pressures in either gravity or direct pressure systems.**

Regulate **fire-flows between zones of unequal pressure.**

Regulate **pressure in filter waste lines.**

No distribution system is better than the valves that control it.

Write for literature, catalogs, and details to fit your particular system.

ROSS VALVE MFG. CO., Inc.

P. O. BOX 596 TROY, N. Y.

Saves TIME LABOR MONEY

PRECALKED!
No tedious lead melting and pouring on the job. The joint materials are placed in the pipe bells at the foundry.

To make tight joints you merely "socket the spigot and calk." Untrained men keep right up with your best digging machine. Investigate!

McWANE CAST IRON PIPE CO.
Birmingham 2, Ala.

McWANE 2" CAST IRON PIPE

"Bob White"
BOX LOCATORS

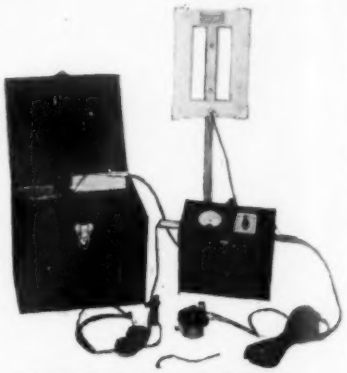
Will locate your boxes as fast as you can walk.

Write for details

"Universal"
LEAK DETECTORS

All kinds of "Universal" pipe locators and leak detectors.

Ask for bulletins



S. F. FERGUSON
11 Hill Street Newark 2, N. J.

MURDOCK SINCE 1853

SELF-CLOSING ANTI-FREEZING HYDRANT

...the Most Reliable Name on OUTDOOR Water Service Devices

...identifying the most dependable Outdoor Water Service Fixtures.

...they give less trouble.

...they have an unmatched record, in every city, over the years, of low maintenance costs.

...it pays to buy

MURDOCK

The Murdock Mfg. & Sup. Co.
426 Plum St., Cincinnati 2, O.

ANTI-FREEZING COMPRESSION HYDRANT

LARGE ANTI-FREEZING HYDRANTS 1½" TO 2" INCLUSIVE

"LOCK-LID" STREET WASHERS 3/4" and 1" SIZES

"Air-Lock" ANTI-FREEZING OUTDOOR DRINKING FOUNTAIN

The American Society for Public Administration

Organized to encourage the science of public administration through discussion and research.

Membership in the Society brings you the official journal

Public Administration Review

a consulting and reference tool for—

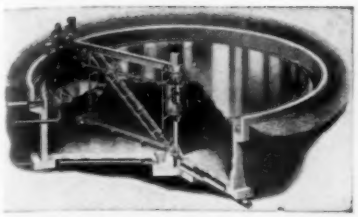
- public officials
- professional or technical administrators
- researchers in diverse fields and at various levels of government, private business, or education
- teachers and students in the social sciences.

Chapters established in various metropolitan centers for the exchange of ideas and experiences.

Membership to individuals—$5 per annum
or
Subscriptions to libraries—$5 per annum

Write for a descriptive folder

American Society for Public Administration
1313 East 60th Street, Chicago 37, Illinois



The new Link-Belt Type "B" circuline sludge collector. The centrally pivoted bridge is equipped with anti-friction bearings, and resilient rubber-tired wheels at outer end of span for smooth travel on top of the tank well.

New Sludge Collector for Settling Tanks

Link-Belt Co., 2045 W. Hunting Park Ave., Philadelphia 40, Pa., have introduced a new sludge collector for the smaller diameter settling tanks known as the Link-Belt Type "B" Circuline Collector. This new Type "B" collector is recommended for tanks up to 55-foot diameter where average domestic sewage is treated.

In Circuline collectors, the settled sludge is collected and continuously moved radially, inwardly, on the tank floor by a conveyor and sludge plow into a sludge hopper from which the sludge is withdrawn.

The settled solids are cleaned from the floor of the tank during each complete revolution of the bridge on which the conveyor is mounted. This permits slow rotation and insures a minimum of disturbance to the settling process and to the settled solids. A conduit under the floor of the tank introduces the sewage into the center of the tank to assure an even distribution of flow thoughout the tank.

When used in primary settling tanks, a screw conveyor is supported along one side of bridge span in order to confine and move the scum and grease to a scum trap. This prevents wind pressure from blowing the collected scum out of reach.

Wider Field for Chlorine Dioxide

By means of a process developed by The Mathieson Alkali Works, 60 E. 42nd St., New York 17, N. Y., chlorine dioxide, which is known to be two and one-half times as powerful as chlorine, is now available. This process was described recently at a meeting of the American Institute of Chemical Engineers by E. R. Woodward.

Although chlorine dioxide has been known to chemistry for a long time, its use has been impractical because it does not keep, and therefore cannot be manufactured in bulk for shipment. This new process provides a safe, practical method by which the user prepares the bleach from chlorine and sodium chlorite at the point and in the quantity required, thus overcoming this difficulty.

Chlorine dioxide has already proved that it has specific value in improving taste in the public water supply.

Annual applications of properly prepared compost builds beautiful, healthy lawns. Vollrath Bowl in Vollrath Park, Sheboygan, Wisconsin, is typical—few lawns get more abuse and few have a better appearance.

Sheboygan uses a Model "NSC-2" Royer to shred, mix and aerate compost and to shred and mix-in sludge and other fertilizing materials.

Royers reduce manpower requirements! One man merely shovels compost materials into the hopper and they come out shredded to pea size. Discharge onto piles or into trucks. Remove stones and trash. Also mix materials for running tracks, tennis courts, paths. Ten models—gasoline engine, electric motor or belt-to-tractor drive. Over 5,700 Royers in use—available under priority regulations.

Send for Bulletin 440. Many models specially designed for disintegrating sludge described in Bulletin 643.

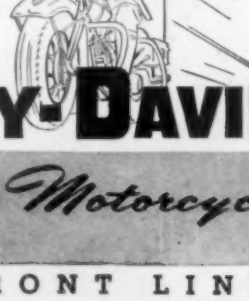
THE ROYER FOUNDRY & MACHINE CO.
179 PRINGLE ST., KINGSTON, PA.
PIONEER BUILDERS OF COMPOST SHREDDERS

SCHENECTADY ADDS NEW HARLEY-DAVIDSONS

Schenectady, New York, has stepped up the mobility and efficiency of its police department with an augmented motorcycle police force — now consisting of 17 Harley-Davidsons with sidecars. The photograph above was made recently after dealer Carl Settle delivered 11 new outfits, taking six old ones in trade. Schenectady knows from years of experience that no other method can match motorcycles for securing top performance in many vital phases of police work. In making your plans for the future, remember that dependable Harley-Davidsons have what it takes to extend your department's range of action — provide more frequent coverage of all beats — and maintain better conformance with traffic and other regulations through more constant evidence of uniformed authority.

HARLEY-DAVIDSON MOTOR CO., Milwaukee 1, Wisconsin

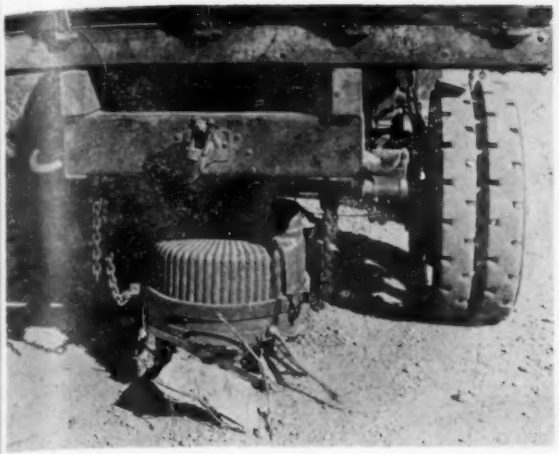
Harley-Davidson Motorcycles are available now for vital police needs. See your dealer.



HARLEY-DAVIDSON

Police Motorcycles

★ ON AMERICA'S FRONT LINES OF ACTION ★



Showing a close-up of the magnet developed by C. Robert Churchill with some of the debris it picked up from the road.

Magnet for Removal of Metal on Roads

Street and highways officials will be interested in a machine developed by C. Robert Churchill, 301 Louisiana Bldg., 611 Gravier St., New Orleans 12, La., for picking up metal articles on streets and highways.

Used by any number of cities throughout the United States over a period of years this machine consists of three huge electro magnets suspended from the rear and sides of a truck so that it covers half of the surface of the street. The magnets are operated by a gasoline-powered generator mounted on the truck body. The magnets weigh about 800 pounds each, and in transit are kept close to the bottom of the truck. While in operation they are lowered by means of screws until they are within 4 inches of the street.

The machine may be utilized on both gravel as well as surfaced roads.

Yeomans Represented in Rocky Mountain Area

Yeomans Brothers Co., 1433 N. Dayton St., Chicago, Ill., announced recently that arrangements had been made for Thompson Pipe and Steel Co. of Denver, Colo., to represent them in the sale of all products in Colorado, and sewage pumps and sewage-treatment equipment in Wyoming and New Mexico.

The Thompson organization was formed in 1878 when it began the fabrication of the steel pipe which gave it its name. They gradually took on other lines and now sales efforts are devoted to equipment for water control, sewage treatment, highway construction, and industrial use.

Both plants of the Denver organization have been awarded the Army-Navy "E" production award.

Army-Navy "E" to Chicago Bridge Plants

The employees of the Birmingham, Ala., plant of the Chicago Bridge & Iron Co., 2127 McCormick Bldg., Chicago 4, Ill., were recently awarded the Army-Navy "E" Production Award.

The award was presented by Rear Admiral J. T. Mathews, CEC, U. S. Navy, Superintending Civil Engineer of Area 4, and accepted by George T. Horton, President of the company. The "E" pins were presented by Major Roy D. Hickman, Adjutant Birmingham Ordnance District, to H. W. Bouchell who represented the employees of the company.

A similar award was also presented to the employees of the Dry Dock Yard at Morgan City, La., on May 4.

The award in this case was presented by Lt. Comm. George S. Huggins. Col. George H. Hudson, U. S. Army District Engineer, New Orleans District, presented the "E" pins and George A. DeGravelle accepted them on behalf of the employees.

The answer is rust—the cure is RUSTOP.

Steel tanks rust from the inside out—and fast. Apply RUSTOP the only known sure method of corrosion prevention to all submerged areas.

INSTALL RUSTOP
NO CHEMICALS USED

Rustop is a cathodic, or electrical method that removes old rust on submerged areas and prevents new rust from forming.

No longer necessary to sandblast, scrape or paint. Cuts down tank repairs and maintenance—extends its life. Installation without interruption to service. Permanent protection at small cost. Operation only a few cents a month. Guaranteed.

Largest cities and industrial firms use RUSTOP. Act. Save that tank.

Cathodic protection approved by Associated Factory Mutual Laboratories—by War Department (Chief Engineers' Office)—by American Water Works Assn.

ELECTRO RUST-PROOFING CORP.
Dayton 10, Ohio, U.S.A.

DOW

FERRIC CHLORIDE

SOLUTION
35-47%
shipped in tank cars

60% CRYSTALS
packed in 300 or 500 lb. barrels

- FOR SLUDGE CONDITIONING
- SEWAGE COAGULATION
- WATER PURIFICATION

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

Billion-Dollar Payday

Uncle Sam's billion-dollar payday calls for global strategy. For over ten million men must be paid . . . *on the spot,* which might be Alaska or Australia, Iceland or India, South America or China . . . *in cash they can spend,* which means dollars and dinari, pounds and pesos, rupees and rubles.

Each man's pay is a complicated calculation that considers rank . . . allowance for subsistence . . . allotments for dependents . . . extra pay for specialist's ratings, overseas service, distinguished service awards and qualification in the use of arms . . . deductions for insurance premiums, War Bonds and special items.

Plainly, Uncle Sam's billion-dollar payday involves one of the greatest figuring and record-keeping jobs of all time, impossible to perform without accounting machines. In the armed services and in government offices, thousands of fast, accurate Burroughs adding, calculating and accounting machines are playing an outstanding part in this war work so vital to our fighters and to their families at home.

"Awarded to the men and women of Burroughs for outstanding production of war materials"

★ ★ ★

Years of experience in precision manufacturing are enabling Burroughs to produce and deliver the famous Norden bombsight—one of the most precise instruments used in modern warfare.

New figuring and accounting machines are also being produced by Burroughs for the Army, Navy, U. S. Government and other enterprises whose needs are approved by the War Production Board.

LET'S ALL BACK THE ATTACK!
★ BUY MORE WAR BONDS ★

BURROUGHS ADDING MACHINE CO. • DETROIT 32, MICH.

Burroughs

FIGURING, ACCOUNTING AND STATISTICAL MACHINES • NATIONWIDE MAINTENANCE SERVICE • BUSINESS MACHINE SUPPLIE

R. H. Morse, Jr. (seated), and John W. Barriger III, Manager of the Diesel Locomotive Division, discussing sales possibility of the company's latest addition to their extensive line.

F-M to Offer Diesel Locomotives

According to an announcement recently made by R. H. Morse, Jr., General Sales Manager of Fairbanks, Morse & Co., 600 South Michigan Ave., Chicago 5, Ill., the company is planning to offer to American railroads diesel and electric locomotives. These will be equipped with diesels of the type now being used by the Navy for submarine and surface craft.

The newly-created Diesel Locomotive Division will be headed by John W. Barriger III as Manager. He has been connected with railway financial, corporate, and related work since 1927.

The first of the new locomotives will be ready for service late this year. Meanwhile, the company will continue its intensive study of the economics of the dieselization of those railroads for which this type of power is most definitely indicated. Mr. Barriger will conduct this study as a part of his broader duties of merchandising the new locomotive.

Commercial Vice-President Named by Worthington

Thomas J. Kehane has been appointed Commercial Vice-President in charge of the corporation's Pacific Coast activities, it was recently announced by the Worthington Pump and Machinery Corp., Harrison, N. J. Starting July 1, Mr. Kehane will be located in San Francisco, and his duties will also entail the supervision of the company's business in the territory served by its Salt Lake City district office.

He has been with the organization since 1915; for the past 19 years in the Sales Department. Before his new appointment Mr. Kehane was Manager of New Jersey sales and Assistant Manager of the New York district office.

Mr. Kehane is widely known in the public utility and petroleum industries.

SEWAGE TREATMENT PLANTS

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and

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Low operating cost.
Low initial cost.

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Scores of municipalities and industries throughout the country rely on the Johnson Right-Angle Gear Drive for use in pumping operations. This drive was designed as a "connecting unit" between the deep-well turbine or sewage pump and the power unit. Reduces shut-downs; gives 24 hour efficient service; lowers pumping costs.

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GET COMPLETE DETAILS

through the local representative of Pump and Engine Manufacturers. These drives are manufactured in a wide range of sizes to meet the specifications for most applications — Sewage Disposal; Water Supply; Fire Fighting; Flood Control, etc. Write for Catalogue No. 12.

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Has Many Uses in a Municipality

FIRE CHIEFS use it for entering dark rooms or basements, also for lighting fronts of buildings.

POLICE CHIEFS use it in dark parkways, alleys and buildings.

HOSPITALS find it useful equipment on ambulances, also at times when power goes off and work must go on in the operating room.

AIRPORTS keep it on hand for the use of emergency wrecking crews.

WATER DEPARTMENTS, too, keep it on hand for emergency night work — such as repairing a large broken main.

Turns Darkness into Daylight

BIG BEAM provides a brilliant beam giving daylight visibility for any night job or emergency. It projects the beam for more than 2500 feet. Or, by using an interchangeable lens, you can project the same volume of light over a wider area.

Recharging is very simple—no need to remove battery from container—simply insert plug of charger into receptacle installed in the lamp head.

The BIG BEAM is portable, powerful, dependable, sturdy, shockproof, and economical in both first cost and upkeep.

Other Dry Cell type Models and accessories available.

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TRAFFIC SIGNALS FOR POST-WAR DEMANDS

AROWAY SIGNALS do more than indicate Stop and Go; they clearly show motorists, at a glance, the open and closed lanes of traffic in all directions. No separate, confusing extra signs for "No Left Turn", "No Right Turn", "Straight Ahead" or "No U Turn" are necessary. Aroway Traffic Signals are all-inclusive for two, three, four, five or six-way intersections.

A complete traffic control like Aroway is seriously needed now and will be indispensable for the post-war traffic congestion. The greatest safety — the surest protection for life and property lies in Aroway, the all-inclusive Traffic Control System for the immediate post-war period. Write now for information.

Aroway Signal above directs traffic Straight Ahead and Right Turn. The Red Bar indicates No Left Turn.

AROWAY TRAFFIC SIGNALS, INC., JOHNSON CITY, TENNESSEE

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NEW CONSTRUCTION—REPAIRS

PRESTRESSED TANKS	STEEL ENCASEMENTS
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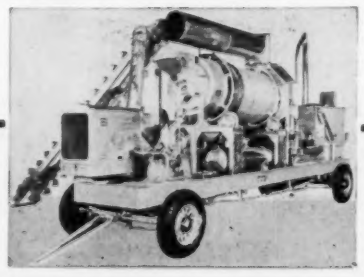

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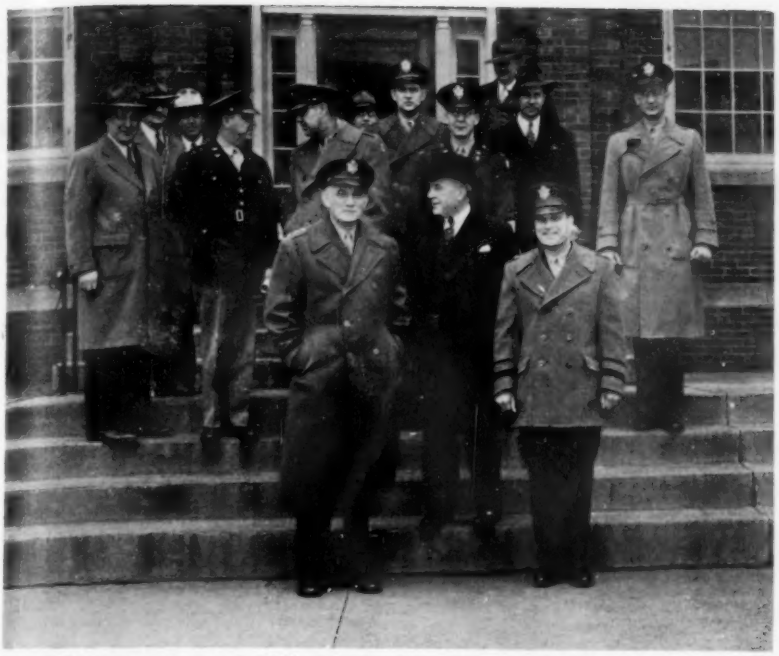

Pictured above are General William S. Knudsen, Director of Production for the War Department; Julius P. Heil, President of The Heil Company; General O. R. Cook, Army Air Forces, Material Command; their staff and company executives.

Heil Plants Inspected by Generals

The two Milwaukee plants of The Heil Co., Milwaukee, Wis., were recently inspected by General William S. Knudsen, Director of Production for the War Department, and General O. R. Cook of the Army Air Forces Materiél Command, accompanied by their staffs of Colonels and Majors.

The Heil Co. is manufacturing at present 40 different heavy-duty wartime items produced for all branches of our armed services as well as Lend-Lease. They are the world's largest producers of aircraft refuelers.

New Officials Elected by Dresser

Announcement has been made by the Dresser Manufacturing Co., Bradford, Pa., of the election of J. B. O'Connor as Executive Vice-President, Arthur R. Weis and Lyle C. Harvey as Vice-Presidents.

Mr. O'Connor was connected with the Prairie Oil Co. and the Socony Vacuum Oil Co., previous to his association with the Dresser organization. He holds office with several of Dresser's subsidiaries.

Mr. Weis is President of the Pacific Pump Works of Huntington Park, Calif., and Mr. Harvey is President of the Bryant Heater Co. of Cleveland, both Dresser subsidiaries.

First Aid Plan for Truck Owners

Recognizing the great need truck operators have for obtaining and maintaining capable drivers and the truck conservation measures needed to keep the lines of motor transportation moving in the face of handicaps and vital wartime loads, The White Motor Co., Cleveland 1, Ohio have developed a program of driver training, covering correct driving, correct parts, and correct maintenance.

To aid the truck owner to put this program into effect, the company has issued a booklet outlining the necessary steps in the course. This is a practical, detailed, ABC guide to the conduct of meetings so that anyone can put it into practice. The book indicates the order of subjects and the use of training aids.

A Driver's Manual has been prepared to be used by owners, fleet superintendents and drivers as a textbook illustrating things the driver should know, including correct preparation, starting taking-off, road practices, parking, and correct care.

A sound slide film, "Wheels Away," is provided and deals with the importance of the drivers to the nation's transport system and the proper handling and preservation of equipment.

Another film, "New Horizons," gives the story of the truck and its importance to the economic life of our country and outlines the proper maintenance methods needed to keep it in efficient operating condition.

This is only a part of the White Personalized Service Plan to aid in driver training. The company are prepared also to set up driver training meetings and are ready to offer special suggestions as a part of their plan.

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Largest variety of designs to perfectly display from one name to thousands.

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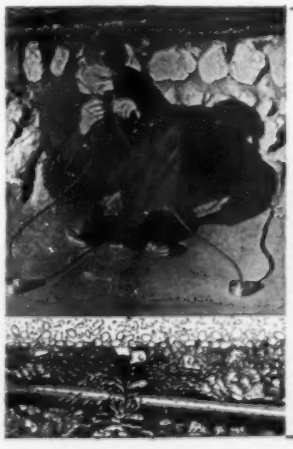

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Without Digging With A
GLOBE GEOPHONE!
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Simple to operate. Anyone can use it successfully. Does not require engineering skill or any technical knowledge. A mechanical type instrument. No fragile parts to be serviced and replaced.

The GEOPHONE works on the principle of the seismograph. Placed in contact with the earth, it accurately detects, by sound, the position of leaks in underground water or steam pipes. Leaks are too costly to be ignored—a pinpoint size leak wastes 65,000 gals. of water annually! A GEOPHONE saves the cost of locating leaks—saves the cost of surveys, excavating, replacing. A big-paying investment for water, sewerage and Public Works Departments—for any plant with underground water or steam pipes.

Outfit complete with two GEOPHONES, connecting tubes, earphones, in heavy leather carrying case with shoulder straps $75

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The Rockwell Plan

At a recent meeting of the Gas Meter Association of Florida and Georgia in Miami Beach, Fla., Col. Willard F. Rockwell, one of the nation's leading industrialists, confirmed the existence of the "Rockwell Plan" described as a revolutionary program designed to ensure post-war employment after contract terminations and during plant reconversion. Details on the complete Rockwell Plan will be announced shortly, but Col. Rockwell outlined in his speech some of the things it hopes to do.

Col. W. F. Rockwell

"The program in its present form provides a formula by which all industry now engaged in war production can continue to maintain their employees during the chaotic period of reconversion. It also provides a medium to guarantee that either compensation or jobs will await each returning soldier or sailor who is an ex-employee of these plants.

"Further, the program suggests a means to prevent the post-war collapse of certain industries through indiscriminate dumping of a war-swollen surplus of goods and materials. Admittedly, $50,000,000,000 worth of surplus goods now overhangs the heads of labor and industry. I venture to suggest that the correct figure should or will be $75,000,000,000 to $80,000,000,000.

"At this time the plan is under study by labor leaders, industrialists, and practical economists. The plan embodies many radical departures from presently accepted methods."

Col. Rockwell vigorously criticized lack of government planning to handle post-war reconversion unemployment, stating that it was universally accepted that millions would become jobless the moment war production ceased.

"Labor and management have equal stakes in the termination of war contracts. The government can quibble industry into bankruptcy and cause unemployment by audit unless practical business men agree upon some plan to avoid such dangers. The plan may not offer the best possible solution, but at the minimum it will stimulate thinking and possibly generate action to solve these problems."

Col. Rockwell is an executive in concerns which have produced more than five million dollars worth of war material since Pearl Harbor. He is Chairman of the Board of Timken-Detroit Axle Co., Detroit, Mich; the Standard Steel Spring Co.; and Chairman and President of the Pittsburgh Equitable Meter Co., Pittsburgh, Pa., as well as an official and director of a long list of other concerns.

1 Low loading height for convenient loading.

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3 Fully enclosed design to prevent "scattering".

4 Streamlined appearance to add to city's prestige.

. . . make this **HEIL** **Garbage Disposal Unit** *an easy-working implement for your employees . . . a modern asset for your city*

Heil Garbage Disposal Units have the "built-in" features that enable your crews to make their rounds quickly, efficiently, and with but little effort on their part. You can be proud of their modern appearance — the residents of your city well appreciate your good judgment in selecting these fully enclosed, sanitary, good-looking models.

They stay on the job dependably, because they are designed with the famous features that are typical of Heil engineering ability, assuring you minimum "time-out" for maintenance and repairs.

Specify Heil Garbage Disposal Units with knowledge that your recommendation is backed by many years of experience in quality fabrication and efficient design.

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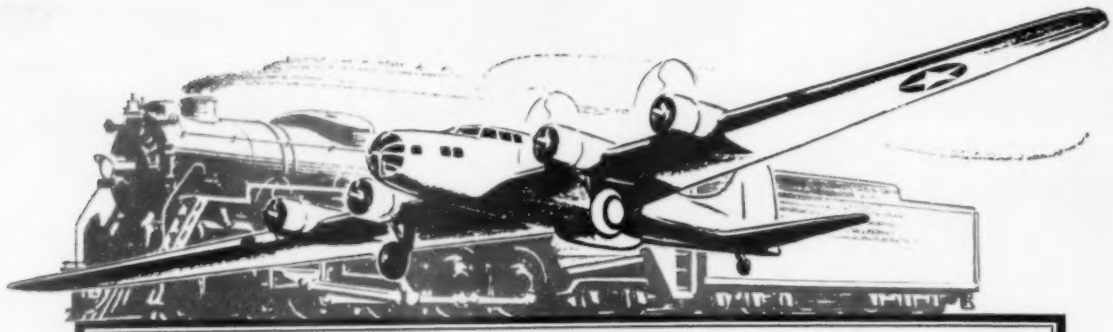
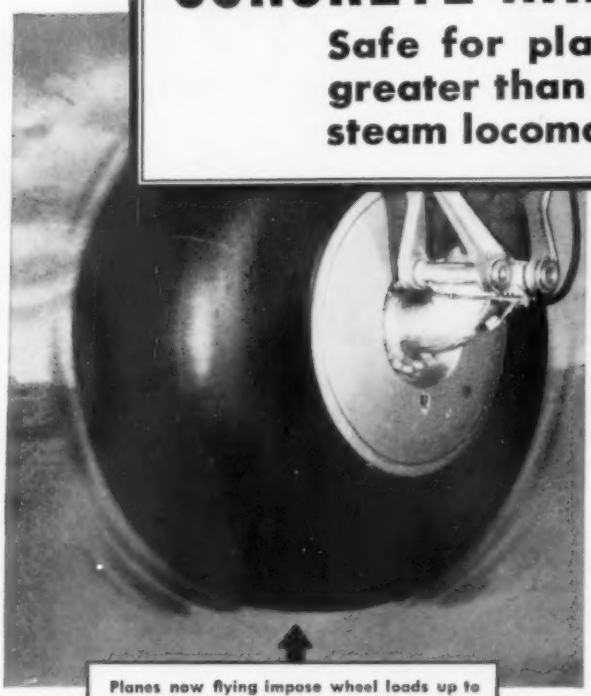
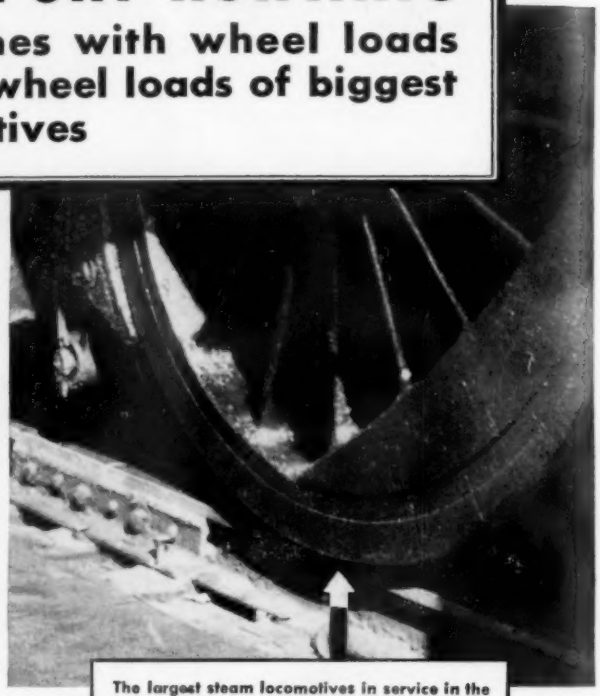


CONCRETE AIRPORT RUNWAYS

Safe for planes with wheel loads greater than wheel loads of biggest steam locomotives



Planes now flying impose wheel loads up to 80,000 lb. It is reported that even heavier planes are being designed. (Douglas Aircraft Photo)



The largest steam locomotives in service in the United States have wheel loads of not more than 37,500 lbs.

Heavy wheel loads test the stamina of airport runways or railway roadbeds. And the wheel load imposed by the large modern bombers and transports is even greater than the wheel load of the largest steam locomotives.

For heavy duty airport runways whose use is expected to extend into the postwar period, safety, economic and engineering facts point to concrete.

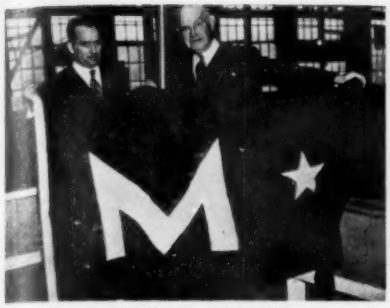
The first cost of adequately designed concrete runways for heavy duty wartime or peacetime service is usually less than that of any other pavement of equal load-carrying capacity.

Engineering design data for wheel loads up to and beyond 150,000 lb. show how to build concrete runways of unquestioned stamina without wasteful overdesign or danger of early failure under heavy traffic.

Our experienced engineers are ready to assist in the design of concrete war or postwar airport pavements.

PORTLAND CEMENT ASSOCIATION
Dept. 6-4, 33 W. Grand Ave., Chicago 10, Illinois
A national organization to improve and extend the uses of concrete ... through scientific research and engineering field work

Buy more war bonds



Charles E. Walsh, Jr., Maritime Commission Director of Procurement, and M. E. Kennedy, President of Kennedy Valve (right), hold the "M" pennant which will fly beside the Victory flag.

Kennedy Valve Wins Maritime Award

Workers and management of the Kennedy Valve Mfg. Co., Elmira, N. Y., were recently awarded the "M" pennant and Victory Fleet flag by Charles E. Walsh, Jr., Director of Procurement of the U. S. Maritime Commission. This was presented in recognition of their past performance in supplying vitally needed Marine valves to meet the wartime shipbuilding schedules. Mr. Walsh pointed out in his presentation address that they had delivered "8 million pounds of valves for the Victory Fleet program during 1943."

After his address Mr. Walsh presented the Victory Fleet flag and the Maritime "M" pennant to M. E. Kennedy, President of the company. The "M" badge was then presented to Fred V. Hood employee representative who has been with the organization for the past 53 years.

The Victory eagle flag symbolizes the Victory Fleet program, while the "M" flag stands for outstanding production of material.

Caterpillar Issues New Booklet

Caterpillar Tractor Co., Peoria, Ill., have just issued a new 20-page booklet, "The Complete Line of 'Caterpillar' Products" illustrating their line of diesel engines, tractors and road machinery on various jobs.

Illustrations and descriptions show the various jobs these machines are doing on the home front.

Accounting and Tax Firms Organized

Announcement has been made that the accounting and tax work formerly done by Messrs. N. E. Webster, H. A. Horne, P. H. Elsdon, L. A. Krahe, M. L. Blanchard, W. W. Willard will now be carried on under the following firm names:

Webster, Horne & Elsdon, 50 Broadway, New York 4, N. Y., with Messrs. Webster, Horne, Elsdon, Krahe as resident partners.

Webster, Blanchard & Willard, 15 Lewis Street, Hartford 3, Conn., and Messrs. Blanchard and Willard are resident partners at the Hartford office.

90 *years*

OF PROGRESSIVE STORAGE TANK ENGINEERING!

Established in 1854, the R. D. Cole Mfg. Co. has long been recognized as one of the nation's outstanding tank builders. With 90 years of progressive storage tank experience at your disposal, we shall welcome the opportunity to serve your tank needs.

1,000,000-Gallon "Cole-Shallow Depth" Tank

ALL SHAPES AND SIZES

The R. D. Cole Mfg. Co. has developed a complete line of elevated steel tanks for water supply, both for domestic service, and sprinkler requirements, ranging in capacity from 5,000 to 2,000,000 gallons. The designs include the standard Hemispherical and Self-supporting bottom, the "Cole Ovaloid," Standpipe, and many individual styles involving architectural treatment to satisfy local conditions, or to provide special shapes for advertising purposes.

STORAGE TANKS

Pressure tanks for storage of gas from digestors at sewage disposal plants so that excess output at peak loads can be used during off-peak periods. Chemical storage tanks, hot water storage tanks, tanks for bulk storage of oils and gas.

CONSTRUCTION FACILITIES

Fabricated steel plate — the R. D. Cole Mfg. Co. has a fully equipped plant for the fabrication of riveted or welded steel plate. In addition to the construction of its regular line of horizontal return tubular boilers, oil storage tanks, tubular heaters, etc., the company is prepared to construct special tanks and apparatus of any specified metal plate.

Designs available for any service, made to your specifications or from our designs submitted by our own Engineering Department.

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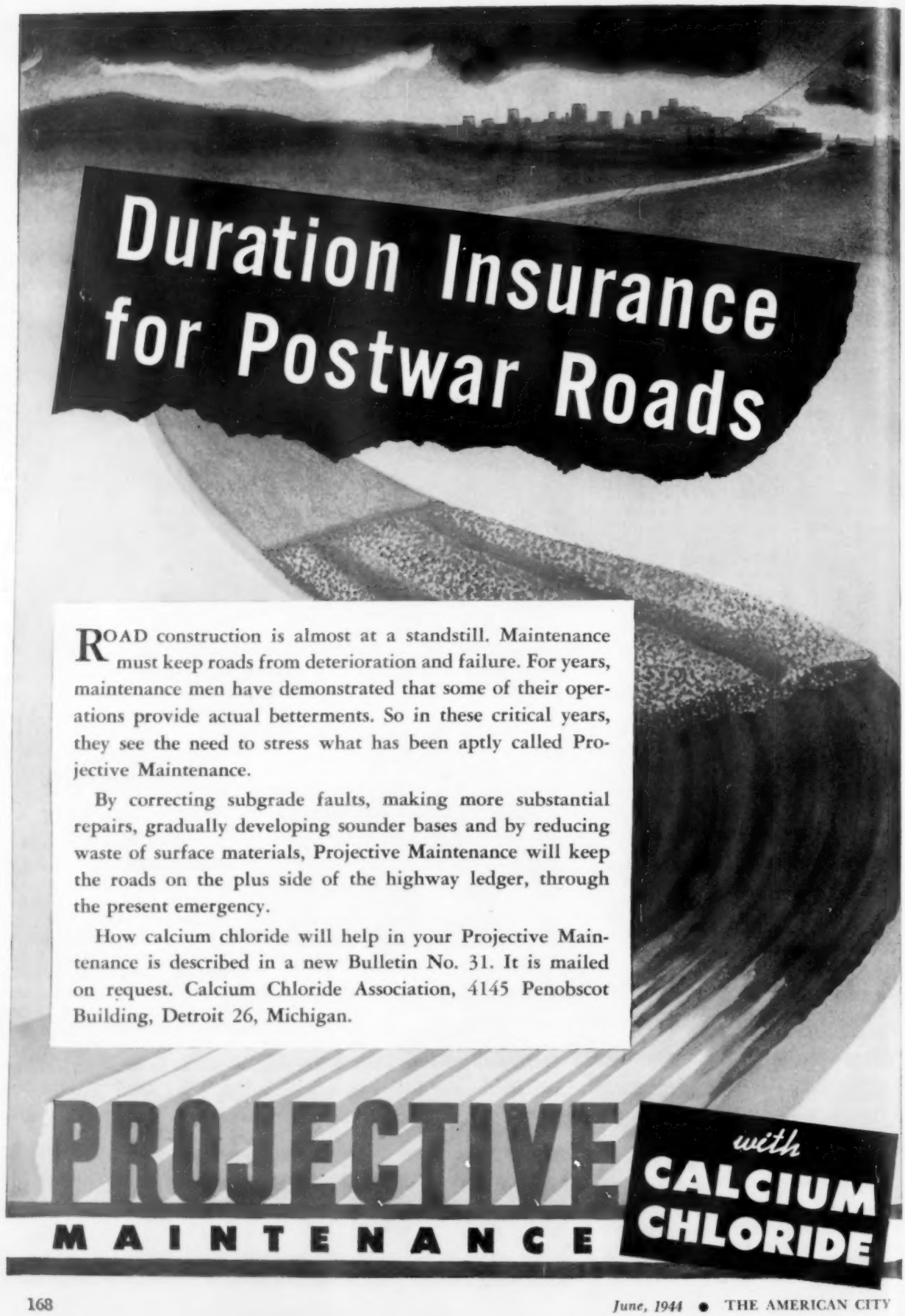
Duration Insurance
for Postwar Roads
ROAD construction is almost at a standstill. Maintenance must keep roads from deterioration and failure. For years, maintenance men have demonstrated that some of their operations provide actual betterments. So in these critical years, they see the need to stress what has been aptly called Projective Maintenance.
By correcting subgrade faults, making more substantial repairs, gradually developing sounder bases and by reducing waste of surface materials, Projective Maintenance will keep the roads on the plus side of the highway ledger, through the present emergency.
How calcium chloride will help in your Projective Maintenance is described in a new Bulletin No. 31. It is mailed on request. Calcium Chloride Association, 4145 Penobscot Building, Detroit 26, Michigan.
PROJECTIVE
MAINTENANCE
with
CALCIUM
CHLORIDE

"E" Award to Worthington-Gamon

Officials viewing the machines that employees of Worthington-Gamon Meter Co., Newark, N. J., used to set the Army shell fuse production record. They are: (l. to r.) Major George L. Cory, Chief, Ammunition Branch, New York Ordnance District; Robert R. Anderson, Vice-President and General Manager of the company; and Lieut. Joseph Kahrs, Jr., USNR, former Newark lawyer, commander of an LST that made seven trips to the Anzio beachhead during landing operations. This is the fifteenth production award given to the various units at Worthington.

Adolph Mueller: Chairman of Mueller Board

Adolph Mueller, Chairman of the Board, Mueller Manufacturing Co., Decatur, Ill., died in his 78th year at his home in Miami Beach, Fla.

Adolph Mueller

The organization was started in 1857 by Adolph Mueller's father as a gun shop, but soon took on the plumbing supply and water works equipment business. Prior to his retirement six years ago Mr. Mueller was President of the company. He became Chairman of the Board at that time. His son, William E., is now President and Treasurer.

Mr. Mueller was not only a prominent figure in the business world but also a popular attendant at annual meetings of various water works associations throughout the country. He will be keenly missed by his host of friends within the water supply and plumbing industries. In 1940, he was awarded the honorary degree of Dr. Sc. by James Milliken University of Decatur.

He was also interested in many of the business and civic activities in Decatur, was a member of the Board of Directors of the Millikin Bank, and actively supported the Boy Scout organizations.

Plugs for Testing Mains

Municipal officials who from time to time have to test mains under pressure will be interested in the features of the test plug made by the Test Plug Manufacturing Co., Skokie, Ill.

Consisting of a steel plate, rubber gasket, and a required number of clamps, the equipment may be easily installed by one man in a minimum of time. The plugs are guaranteed to withstand hydrostatic pressure of 300 pounds per square inch, and have been found to be water and air tight.

With regard to the versatility of the plug, the clamps may be used on a number of different sizes of pipe with only a separate steel plate and gasket being required for each size pipe.

A different type of plug is available for use on pipelines employing spigot- or plain-end pipe that is put together with couplings.

The plug may also be used for testing reclaimed pipe and fittings, and can be utilized on a broken pipe line where service must be restored temporarily.

Meter Boxes — Meter Yokes
Meter Box Covers — Service Boxes
Valve Casings — Valve Boxes
Meter Testers — Tools—Instruments
Underground Housings
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Three general types of gray iron Meter Boxes are in several sizes for protecting all meters in every climate. . . . Write for new Catalog

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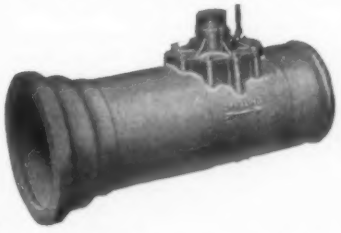
SPARLING MAIN-LINE METERS

EACH day finds more converts to the Propeller-type Meter for main-line water measurement! A quarter century's experience proves that consistent accuracy is assured with Sparling Meters.

Bulletin 308 comes on request.



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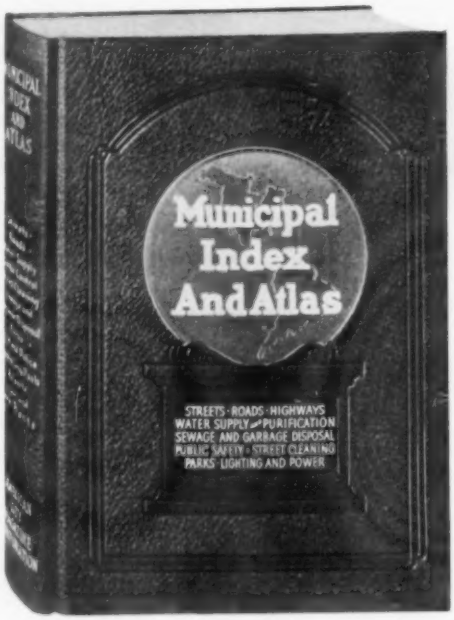

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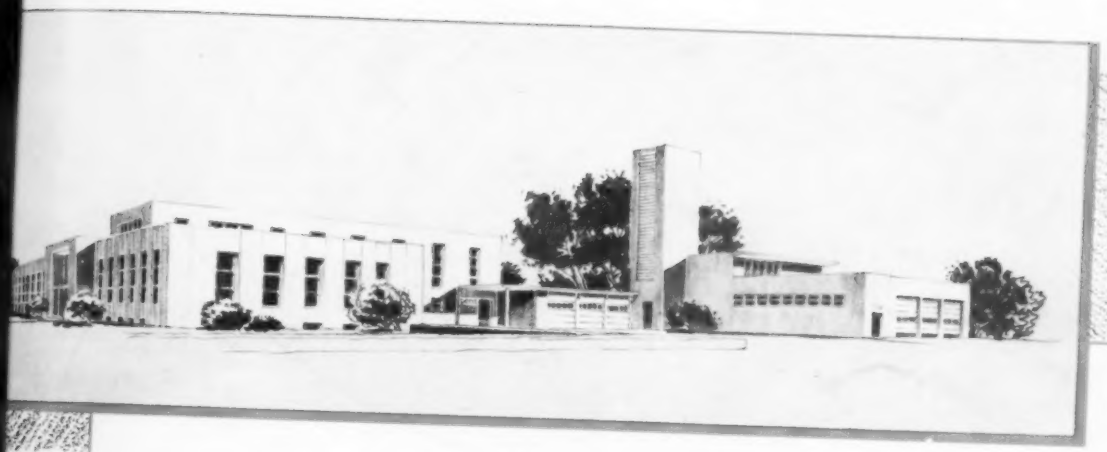
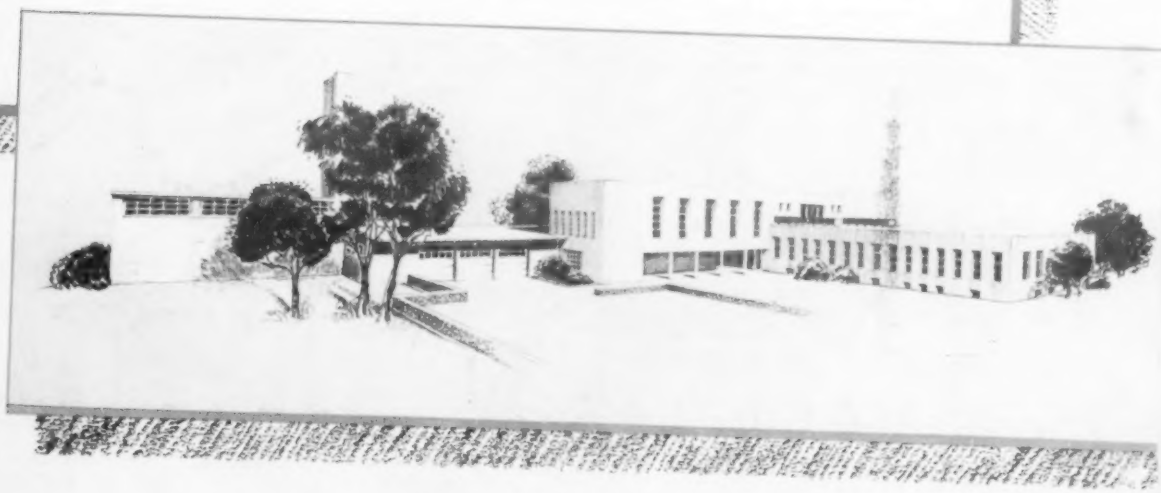


Municipal Buildings of Tomorrow

To aid municipal officials and architects who are concerned with the planning of well-designed and soundly financed public buildings, ARCHITECTURAL RECORD and THE AMERICAN CITY have collaborated in presenting the studies to be found on pages 51 to 57 of this issue. While most of the illustrations show buildings actually planned for post-war construction, the opening article and the sketches on this cover present a city hall especially designed for this series of articles. The aim of the architects—Skidmore, Owings and Merrill, of New York—has been to plan a building which will be at once efficient, convenient, flexible, expandable, attractive, and economical.